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Boll Weevil and Cotton Acreage Outlook for 1928 and Their Interrelation

Weevil Damage Hard to Forecast—Growers Endeavor to Increase Production per Acre

By George W. Fooshe

THE author presents interesting sidelights on interpretation of reports on weevil hibernation and emergence with the suggestion that perhaps after all the weather in July-August more positively controls weevil damage to the cotton crop. At best infestation of the coming crop is difficult to gauge in advance but the outlook on extent of infestation may have a tangible influence on acreage planted and amount of fertilizer used.

Increase of yield per acre offers opportunity for greater profit to the grower. An unwieldy acreage increase this year might make weevil control more difficult. The author believes a large crop grown on a small acreage as the ideal condition.

THE weevil hibernation report released Jan. 14 by the U. S. Department of Agriculture does not make very cheerful reading for those looking forward to heavy per-acre production of cotton in the South in 1928. On the contrary, it gives to all branches of the textile industry dependent upon America for its supplies of raw cotton cause for considerable concern.

Comparative figures for Louisiana are rendered practically valueless because of the influence of flood conditions on weevil in that State in 1927. But returns for South Carolina show that 1525 weevil per ton of Spanish moss entered hibernation in that State compared with 48 for 1926 and 52 for 1925, while those for Georgia disclosed 220 against 48 and 39. In Alabama, there were 148, with no comparisons available.

Record Hibernation Reported

In the absence of specific data for other States, the Department makes the following significant general comment:

"States east of the Mississippi reported that the late crop of weevil was more abundant and in better condition for hibernation than for several years. In the southeastern States, the increase in weevil population was greater and more general than for a number of years, with North Carolina and South Carolina reporting a larger weevil population entering hibernation in some sections than ever in their weevil history. Counties in southwestern Tennessee produced an abundance of late weevil and Arkansas shows more general infestation with greater numbeers available for hibernation, than since 1923.

"In Oklahoma, weevil, in their migration during the summer of 1927, advanced further in northern and western sections than ever before. Large numbers were found in these sections, while late-fall infestation in southeastern and central sections was considerably less.

"In Texas late fall conditions were favorable for weevil multiplication. Growth of plants continued under mild temperatures and frost came much later than average. Thus an increase in weevil population was noted late in the season.

"In Mississippi weevil were unusually abundant, except in inundated area, and in Alabama weevil were abundant throughout the southern half of the State. Except in extreme northern Georgia, weevil were fairly abundant, with most districts showing considerably more than for several years."

The foregoing represents full confirmation of the views of the trade on two points: The numerity of weevil in the late fall and earl winter as compared with more recent years; and the fine physical condition in which they went into hibernation.

There were very few leaf worms in the South in 1927 to strip the foliage and thus deprive weevil of either breeding places or food. This is in striking contrast with what happened in 1923 when leaf worms and caterpillars stripped the plants of almost every vestige of breeding places and food. Frost came abnormally late in all parts of the South and, if weevil did not enter hibernation in exceptionally fine physical condition, it was their own fault rather than the fault of Nature.

Temperatures and Emergence

Over against this liberal supply of weevil entering hibernation in prime physical condition, nothing can be set except the fact that temperatures over the northern half of the producing area during several days around the beginning of 1928 were lower than since 1918. Have these low temperatures decimated the fine physical specimens that went into hibernation? That remains to be seen. The "doctors" disagree. There are yet some weeks during which equally low, or even lower, temperatures may prevail. There may be days that are warm enough to tempt weevil from their secure hiding places followed by temperatures low enough to play havoc with them in this exposed position. Only about one-half the winter is gone at this writing.

Some of the scientists are strong believers in the theory that weevil cannot, under any conditions, withstand temperatures of 10° Fahrenheit, or lower, for several days in succession. They therefore insist that nothing is to be feared in the way of emergence next spring in the territory visited by such temperatures recently. Others contend, with equal vehemence, that there is nothing in the records to justify the conclusion that such temperatures result in subnormal survival and emergence.

Moreover, there are others who hold that heavy mortality among over-wintering weevil is far less important than the character of the weather during the actual crop-making period and particularly before plants attain sufficient size to afford weevil larvae protection from the sun.

Errors in Weevil Forecasts

This view is strongly supported by what happened in 1927. There was such light emergence then that one of the leading proponents of the theory of low-winter temperatures prepared a forecast on what might be expected in the way of weevil damage that had to be seriously revised in the light of actual developments. He pointed out that there was greater prospect of weevil infestation and activity in the southern-third zone, particularly in Louisiana and part of the Brazos bottoms in Texas, than during 1926, but he gave the trade, through the medium of this forecast, such a cheerful view regarding the remainder of the belt that they were ill-prepared for what actually happened.

The major portion of Texas, practically all of Oklahoma and Arkansas, as well as much of North Carolina, South Carolina, Georgia, Alabama and Mississippi, were included in the area where little or no damage might be expected. They had winter temperatures of 10°, or below. Moreover, the number of weevil entering hibernation in the late fall and early winter of 1926 was exceptionally light. Thus, he had two favoring conditions.

But he also had one which was distinctly against him and this lay in the wetness and deficiency in sunshine which characterized the greater portion of the belt from late spring until practically the end of August. And this one factor, adverse to him and favorable to rapid weevil propaga-

tion, knocked all of his theory into a cocked hat.

Oklahoma, marked out for the free zone, suffered the worst damage in its history, Arkansas suffered severely and the southern two-thirds of the States east of the Mississippi, with the exception of Tennessee and western North Carolina, experienced the worst ravages in the history of those States. Weevil also covered a greater area in central and northern Texas than ever before and the excerpt from the official report already cited fully confirms what happened in the way of invasion of new territory in Oklahoma.

This is, in brief, the way the facts failed to square with a pre-season forecast of which might be expected. And such a showing naturally tends to shake the faith of the trade in the value or dependability of such forecasts.

Summer vs. Winter Weather

In this connection, it may be noted that F. W. Gist, federal statistician for Alabama, has issued a statement in which he flatly says that the extent of damage that may be expected from weevil is determined more by the number of rainy days during the crop-making period than by the initial infestation. In support of this view, he has prepared a table for the years 1916 to 1925, inclusive, in which he shows that, with double the number of rainy days in July and August in 1917 compared with 1924, damage was approximately twice as great in the former as in the latter though there was practically no variation in winter temperatures for these two years. He also lays down the broad proposition that, because it is impossible to foretell what the weather will be during the crop-making period, it is impossible to intelligently forecast what may be expected in the way of weevil damage. His records and his conclusions cover only Alabama but they appear applicable to the entire producing area.

Mr. Gist has served the United States Department of Agriculture with marked ability in Alabama for a number of years and cannot be properly classed with what a brilliant Wall Street writer characterizes as "amateur entomologists." He has carefully prepared his data, has drawn his conclusions with equal care and has thrown behind them the result of years of experience in observing weevil under actual working conditions. His ideas are commended to the careful consideration of readers of TEXTILE WORLD.

The question of weevil damage in 1928 is in the lap of the gods. It may be very heavy. It may be unimportant. But it seems pertinent to remark, at this juncture, that it requires a very high order of optimism to view the outlook with complaisance. This is particularly true in the light of what happened in 1927 when smallness of winter survival and early spring and summer emergence were so light as to suggest the probability of a comparatively small damage.

Weevil in Cycles?

Such a state of mind must not only ignore what happened in 1927; it must also completely disregard the cycle idea as applied to weevil. The first cycle in which damage was heavy for the major portion of the belt was embraced in the calendar years 1921, 1922 and 1923. This was followed by 1924, 1925 and 1926 during which activity of weevil was on the diminuendo, amounting to practically nothing in the last-named. Nineteen hundred and twenty-seven marked the return of weevil on a distressingly large scale, as already shown. Is it to be a single year of such activity or is it the first of another cycle of mounting damage?

The answer to this question derives its importance largely from the influence weevil activity may have on the per-acre yield of cotton. Per-acre outturn in 1921 dropped to 124.5 pounds, the smallest in the history of the South. It rose to 141.1 in 1922 and dropped back to 130.6 in 1923. In 1924 it was 157.4, in 1925 it reached 167.2 and in 1926 it was 181.9. In 1927 it fell back to about 150. What will it be in 1928? Have we entered upon another cycle of decreasing yield per acre or is 1927 just one of those freak years sandwiched in between 1926, one of abnormally large per acre yield, and 1928, which may be perfectly normal in respect to yield per acre? That appears to be the biggest question confronting textile interests dependent on America for cotton.

Trend in Acreage and Yield

Acreage is a flexible item and is subject to frequent change in accordance with fairly well-established principles. In a general way it may be said that years of prices unprofitable to growers are followed by decreased acreage and vice versa. Among the more striking illustrations of the former are 1916, 1921 and 1927, following the big yields and low prices in 1914-15, 1920-21 and 1926-27. Instances of the latter are seen in 1916, 1924 and 1925, when prices and other favoring factors proved a stimulus to larger plantings.

Decrease in acreage in 1927 accounts for about 13½% of the loss in yield experienced. The remaining 17½% is attributable to decreased per-acre out-turn and weevil were by far the biggest factor in this latter item. Drouth, root rot, flood conditions and excessive precipitation in a few localities took some toll, but it is conceded that the total of all the foregoing was small as compared with the damage wrought by these recurring pests.

When it comes to the financial return received by growers of cotton or to the actual cost of the staple to textile interests, per-acre yield is more important than the total. A crop of 15,000,000 bales grown on 48,000,000 acres yields the farmer far less and costs the spinner a great deal more than a similar crop grown on an area eight to ten million acres smaller. This is too patent to need any elaboration here. It is therefore clear that the interests of both planters and manufacturers are better conserved by large than by small or modest per-acre outturn and this is a point which growers of cotton are not likely to overlook in planning their acreage for 1928.

Crop Diversification Established

Material expansion in acreage to cotton means, so far as the major portion of the belt is concerned, some decrease, if not a corresponding one, in acreage devoted to other crops. Western Texas and western Oklahoma and part of the central Valley States are an exception to this general rule but in a large portion of the producing area practically no new lands are coming under cultivation and increase in acreage to cotton is at the expense of acreage to food and feed crops and is therefore inimical to diversification.

The cotton crop grown in 1927 was one of the cheapest produced in recent years because of the financially straitened condition of the majority of growers. Diversification was practiced on a larger scale than in any recent year and planting interests are in that happy position where they have far less than usual in the way of food and feed crops to buy. Moreover, they received approximately 135 per capita more for their cotton crop in 1927-28 than in 1926-27 although the former was some 5,000,000 bales, or approximately 30%, smaller than the latter.

Rather strong intimations have come from a large area in Texas recently that growers of cotton there are so well satisfied with the results of diversification in 1927 that they are loath to abandon this in 1928. Texas occupies the position, by virtue of the immensity of prairie lands not yet brought under cultivation, of being able to increase its acreage to cotton almost at will. But will it do so? So far as Alabama and the South Atlantic States are concerned, they cannot increase their cotton acreage without decreasing their acreage in other directions whereas diversification has proven quite profitable there. Central Valley States may return almost to the acreage of 1926-27 if they desire without seriously impairing their diversification policy. The same is true of Oklahoma where large areas are coming under cultivation.

But, with current prices not of a kind to materially stimulate acreage increase and with more weevil in hibernation than in any recent year, which necessarily implies a certain amount of threat from these pests, will planting interests devote more land to cotton than they can properly cultivate or fertilize or than they can give the sort of attention that is desirable in the event the weevil threat becomes a reality? Will they eliminate diversification and "put all their eggs in one basket," a policy which has always proven disastrous to them?

Perhaps a High Yield Year

They are already buying more fertilizers than up to this date a year ago. Is this part of their plan of trying to increase their yield per acre or is it an indication of their intention materially to increase the area seeded to cotton? Is it not perhaps recognition of the fact that they are confronted with a really serious weevil situation and that they are planning to get ahead of these pests by forcing their crop to maturity as rapidly as possible?

Planting interests and those controlling the credit on which they operate are more intelligent today than ever before. They have learned some bitter lessons during the last few years. They have found that really big crops do not yield anything like the same financial returns as moderately large ones or even comparatively small ones, such as produced in 1927. Are they to discard such dearly bought experience?

The textile industry, fortunately, is beginning to look out for itself in a way it has never done before. The Cotton-Textile Institute represents a new and well-directed force in its behalf. It is seeking to improve merchandising methods and to build new outlets for products made of cotton. There is encouragement in this. But it is questionable whether sufficient progress has yet been made to justify planting interests in devoting all of their attention to the production of cotton to the exclusion of other things which enter into the cost of living as well as into that of growing the staple.

The necessity for a reasonably large crop is greater this year than for at least the last two. Present indications are that, even after allowing for considerable contraction in consumption from the high figures thus far this season, as well as from the brilliant record established in the last half of 1926-27, carry-over of American cotton, as of July 31 next, will be well below 5,000,000 bales. This prospect should insure unusual efforts in behalf of larger production. But will it not be better for all concerned if these take the direction of increasing yield per acre rather than of increasing acreage and gaining a huge total through the uneconomic channel of extensive rather than intensive methods?

Moderate Increase Probable

Nothing definite will be known regarding acreage under two to three months. It will take this long accurately to gauge intentions of planting interests. After that must come the effect of weather on land preparations and seeding and also the influence that changes in prices may exert. Pending these developments, it is probably not safe to count on more than moderate increase at best.

It will probably be the middle of March before the U. S. Department of Agriculture makes any announce-

(*Continued on page 71*)

Silk Association of America Holds its Fifty-Sixth Annual Dinner

Huge Attendance of Previous Years Held Down to 1,000 Guests

SILK men from all parts of the United States together with members of the consulates of important silk producing countries and an impressive list of guests were present at the fifty-sixth annual dinner of the Silk Association of America held Thursday evening, Jan. 19. The grand ballroom of the Hotel Astor was the scene of the festivities as for many years past.

The dinner marked an important departure in that an effort was made to control the attendance which in recent years has become so huge as to present a problem. In the neighborhood of 1,000 guests were present which compares with almost double that number in 1927.

R. J. F. Schwarzenbach, vice-president of the association, presided in the absence of H. Schniewind, Jr., president. The invocation was pronounced by Rev. W. Warren Giles, rector of the First Reformed Church of Orange, N. J.

The other speakers were: Samuel W. Reyburn, president of Lord & Taylor; Donald Ogden Stewart and Beverly Nichols. Music was furnished during the dinner by Paul Whiteman's Picadilly Players.

Speech by Mr. Schwarzenbach

In his introductory address Mr. Schwarzenbach referred early to the silk men as philanthropists which evidently struck a responsive chord judging from the round of applause and laughter that greeted this remark. He touched briefly upon several important problems of the trade in his address which follows in part:

"We are all silk men, or have been once upon a time. That means that we deal in, manufacture, or process silk, or things of which silk is a part. Just now we are philanthropists, who work for the good of our customers and the public. That may have its compensations if the work was constructive, but it is not. We spend our time unfortunately haggling over little things. We unravel motes; we mend holes instead of knitting stockings.

"We think we know the whys, too: Excess-capacity, the result of easy credit and over-discounted opportunities; our own increased efficiency—which produces better, and cheaper, but more goods; a price break which befell the silk market earlier in the season; and a changed diet which Brother Rayon has forced upon us.

"Nor do we do anything about it. Individually, we try to become more efficient—unfortunately, that makes for more goods. Here and there we buy-up, instead of add too, distress production—an example which should be followed. More and more, too, we individualize our lines.

"Collectively, we gather and disseminate trade fact data whereon to base action; devise rules in the interest of sound trade practices; exchange credit—and other useful information, and do what not? Probably we should organize better trade action, through group leadership, and a more orderly relationship with our customers, through trade conventions, perhaps. The logics of the case, and public opinion point in that direction.

"In these endeavors the Silk Association of America is our main instrument of progress. Many of its members give to it much of their time. Its work, therefore, is well done. Yet, measures aiming at more initiative inside the Divisions, more specialization in the control work of officers, and better promulgation of interest, by means of annual conventions for the holding of elections, the receiving of reports, and the framing of policies, are worth considering.

Suggestions for Betterment

"Our difficulties have, of course, led to the discussion of more specific remedies which I cannot let pass unmentioned.

"It has been suggested, for instance, that some of the larger, and fitter, producers in our industry amalgamate. That may hold out promise. But as we cater to psychological needs of infinite variety in constant change, mass production might easily spell mis-production.

"Another recommendation is that, with the aid of producers and dealers of raw silk, we form a 'silk institute.' Its task would be to 'boost' silk—keep its outstanding merit ever before the public. Personally, I favor the idea, particularly if such an institute were to add to its function that of protecting the public against injudicious buying, say through a system of marking fabrics and perhaps apparel—according to component materials.

"Of late the idea of a Silk Exchange has again received attention. I am not the spokesman for any particular interest, but I feel that many purchasers of raws are now operating under a system which does not permit them to act on their judgment. If they want to buy futures—in worthwhile quantities—they must do so in qualities of low grade. These they cannot use. So they must sell them. But they have no market. An exchange would provide one. It would also tend to promote proper grading, and thus make possible equitable adjustments on contracts for late or non-delivery, for which buyers now have practically no redress. Therefore, provided silk be a commodity plentiful enough to be dealt in on an Exchange, and difficulties of technique can be overcome, there would seem no reason why we should not endorse the exchange principle."

Address by S. W. Reyburn

After his address, Mr. Schwarzenbach introduced Samuel W. Reyburn who spoke in part as follows:

"We, of the retail stores joint with you, are now in this enlightened age, agents for the consumers. Education has progressed to that point where there are so many conscious-minded people in the world that practically all the customers that come down Fifth Avenue know pretty well what they want before they ever go into a shop, and they tell you what they want, and if you haven't it, they don't take it.

"So I say, we have become their agents in the last fifteen years, to secure in advance what they want rather than as we were prior to that time, agents of the manufacturers' to distribute what they produced.

"Now, then, along with this conscious-mindedness you know this age is called many things. It is called, of course, the jazz age, among other things. It is called the age of general education. It is called the age of industry. But it seems to me that the fundamental thing, after all, is the minds, the feelings of people, and it seems to me a very good name for it would be the conscious-minded age.

"We all know the importance of color in the scheme of things today, and particularly in silk. It has always been an important factor in silk. And I don't believe foreign producers handle colors any better than you do.

"We find, however, that in the question of design, the silk manufacturers of America are not, in our opinion, up to what we find the artistic people of Europe are up to. It may be that we are too busy and we haven't time for that thoroughness that makes for art. It may be that we are still thinking of those old days when you didn't have to think so much of the desires of the consumers, but you could please them with most any novelty, and we still think our customers are in that frame of mind.

"We can buy your goods and offer them to customers at $4.50 a yard and they will be just as fine material and just as well made, and they will be just as well dyed, perhaps, but the French goods, not better as a material, no better dyed, are costing you more in the French market, paying an enormous duty; placed right alongside of them; they are three times the price, and the French goods will sell faster than the American goods.

"Eighty-nine or 90% of all the goods we sell are bought right here in America. It is only a small percentage that we offer to customers which comes from abroad. Yet that is our prestige stock.

Plan for Handling Goods

"In our shop, to divide up our stocks that possess the fashion factor in a way that we can understand, in importance to the reaction of customers to them, we make four groups. First of all, we have the place where we beat in the new things, the creations of our own, or new creations of other people—we call that prestige merchandise. We don't buy that primarily to make profit. We buy it to give us prestige; first, prestige in the department, prestige then to the stores, if we can, prestige with our customers, and prestige with the members of our own organization. That prestige stock isn't a large part of our investment, but it is an exploration out in the land of desire.

"In all of those cases where we hit the bull's eye with a purchase in this prestige stock, it quickly becomes a part of the fashion stock, where it is watched carefully, and if the reorders come often enough it becomes a staple stock for a while.

"Those three are the important stocks. But there is another one. We have got to close out. And that fourth grade that has been there too long, and we know that we must get our money back and try our judgment again—we call that the slow stock. Around the store it is called slow selling.

"Some plan like that might help the manufacturers. His prestige, his fashion, his staples, and then he has some stock left over may be for a year or two and that is his slow stock, and he gives each one the attention it should receive."

Dinner Committee

The dinner committee consisted of E. Irving Hanson, chairman; Paul Hyde Bonner, James A. Goldsmith, H. Morton Merriman and H. F. Scudamore.

The following were at the president's table:

William H. Yelland, president of the Silk Travellers; Saburo Morita, Raw Silk Association of Japan; James Wilson, Jr., president of the Paterson Chamber of Commerce; Raymond J. Newman, mayor of Paterson; Takeo Hariguchi, Japanese Financial Commissioner; J. E. Edgerton, president of the National Association of Manufacturers; K. U. Chiyama, acting consul general of Japan at New York; Beverly Nichols; Emmanule Grazzi, consul general of Italy at New York; Maxime Mongendre, consul general of France at New York; O. H. Cheney, vice-president of

the American Exchange National Bank; Donald Ogden Stewart; Lewis E. Bernays, British consul at New York; Magnus W. Alexander, president of the National Industrial Conference Board; S. S. Young, consul general of China at New York; Edward T. Pickard, chief, Textile Division, Bureau of Foreign & Domestic Commerce; C. A. Reynolds, president of Silk Association of Canada; Meijiro Hara, commercial attache of Japan; Frederick Kracke, appraiser of the Port of New York; Moses Mosessohn, executive chairman, United Women's Wear League of America; Ziang Ling Chang.

Rayon Fabrics Institute

Organized to Promote Knit Goods Business

Manufacturers of rayon knit fabrics have organized the Rayon Fabrics Institute, Inc., and have elected the following directors: Max Doft, of the Princeton Knitting Mills; Harry Gold, of the Argus Knitting Mills; Alexander Grodnick, of the Algro Knitting Mills; John H. Lang, of the Twentieth Century Rayon Textiles, Inc.; Charles Steinfeld, of the Halperin Mills Corp., and I. Rogosin, of the Beaunit Mills.

This organization recently secured a charter in which were set forth as its purposes and objects the fostering of the business of its member manufacturers of rayon knit fabrics, the reform of abuses in the trade, the correction of unfair and unjust practices, the establishment of a credit exchange information bureau, the establishment of uniform customs and principles of ethical conduct, arbitration between its members and others, and a more enlarged and friendly relationship between those engaged in the industry.

Harold R. Lhowe, of Lhowe & Obstfeld, attorneys who filed the certificate of incorporation for the Institute, when interviewed, said:

"The need for such an institution has become more and more apparent as the problems of the industry have multiplied. This industry, while comparatively of recent origin, has grown in leaps and bounds within the last few years.

"Several previous attempts to organize this industry have not met with success. The success of this organization is due, in a great measure, to the untiring and unselfish efforts of a man, who, strange to say, is not himself engaged in the manufacturing of fabrics. Several charter members of this organization called upon Samuel Rottenberg, president of Rottenberg Sons Co., Inc., yarn distributors, and asked him to exert, in behalf of this industry, the ability he has shown in organizing various institutions with which he is identified, and to use his influence among the manufacturers engaged in this industry in bringing about the Institute. While at first reluctant to undertake this work, he was finally convinced of the sincerity of purpose on the part of the men engaged in this industry and consented to undertake this task.

"Mr. Rottenberg has been charged with the responsibility of securing an outstanding figure in the industry, to act as the managing director of this Institute. Announcement of his name will be made shortly."

Irish Linen Volume at New Low

American Takings Drop 50% in Four Years—Damasks and Handkerchiefs Are Hopeful

By Alfred S. Moore

BELFAST, IRELAND.

MIRACLES do not happen nowadays but those connected with the Irish linen industry still anticipate that some miracle may check its downward career. A quarter of a century ago it was prosperous and promising, but now it has shrunk to decadence and decimation. Is there to be any halt, and recovery?

How great has been the decline may be seen when we compare the 73,835,300 sq. yds. of all linen piece goods exported to all parts during last year (1927) with the corresponding 250,688,705 sq. yds. exported during 1912—just fifteen years ago. Of course, the war intervened, but linen being essential for war purposes, did not decline very much during that period. The decrease has been altogether subsequent. Will it continue?

Decline in U. S. Buying

Naturally the linen buying of the United States is a great influence in the condition of the Irish linen industry. In fact, the greater part of the present decline is due to the diminution in American buying, the British overseas dominions sharing to only a minor extent. Nevertheless, how vastly the United States patronage of Irish linens has altered is evident when we see that it takes only about 34% of the total exports now, compared with nearly 60% in 1912. This fall is occasioned by the decline in piece goods buying from 147,679,646 sq. yds. in 1912 to only 29,685,770 sq. yds. for 1927. Truly this great reduction is remarkable when it is considered how enormous have been the increases of the United States population and wealth simultaneously.

Naturally there are explanations for this very emphatic decline in American linen buying. First: the tariff, ranging form 35 to 75% ad valorem, means a big difference in the financial ability of the average housewife, especially since linen is rather a luxury commodity. However United States linen imports actually increased subsequent to the introduction of the Tariff Act in 1922. Moreover, such hopes as were entertained for any future relief are now dispelled by President Coolidge's recent declaration that present tariffs must remain immutable. Of course, cotton is always a strong competitor of linen, and doubtless the high attractiveness of American cotton articles has aided them in largely superseding those of flax. It may also be that American linen manufacture is making some headway. However, probably the greatest explanation is the increasing entry of European linen goods, especially of the coarser fabrics, into Transatlantic markets where their lower prices have made them more interesting. Whether, therefore, Irish linens can regain their previous previous precedence is a matter for much doubt. In fact, even among Belfast manufacturers no great hopes are anticipated of such recovery.

Sharp Advance in Flax

Considered generally, 1927 was a deeply disappointing year for Irish linens. Thus the hopes entertained during its earlier months that, with linen quotations at a moderate basis, revival was certain, vanished as spring passed into summer. With no Irish flax to rely upon, holders of European flaxes demanded increased prices and these gradually rose until now flax stands at almost 80% higher than in January 1927. Concomitantly yarns also advanced up to from 25 to 33% higher. Nevertheless, as most Belfast manufacturers had bought goodly stocks of flax at its low level, cloth quotations did not soar to the same degree; and today stand at only 10 to 15% higher than a year ago. Indeed, it was almost entirely due to this latter fact that linen exports do not stand at a much lower figure than they do. Nevertheless, since the shipments represent goods ordered some months in advance, it is certain that the effect of the higher raw material costs will be more emphasized during the next few months. Yet the discomforting feature remains that total exports of linen piece goods, at 73,835,300 sq. yds., mark 1927 as the lowest linen business year—with exception of 1921—in the long history of the Irish linen industry.

The following table exhibits the exports of Irish linen manufacture during several years:

	1913	1925	1926	1927
Linen piece goods (1,000s of sq. yds.)	193,696	83,691	75,282	73,833
Handkerchiefs (1,000s of doz.)	.....	3,128	4,069	5,544
Damask table linen ($1,000s value)	.....	$6,425	$6,690	$7,390
Linen thread (cwts)	23,815	24,572	23,080	22,152
Total linen manufactures exported ($1,000s value)	$41,240	$56,035	$50,090	$50,690

Course of American Takings

It might be deduced that the total volume of all British linen goods exported last year was probably 8 or 10% less than during 1926; though with the higher values during the fall months the total value was somewhat more. Certainly the United States buying was considerably less, and may be explained partially by the great wane of linens for women's dress as compared with a few years ago. In fact, how gradual this decline in American buying has been may be seen by the following data relative to British linen imports thereto during the following years:

1924	67,306,600 sq. yds.
1925	40,225,200 sq. yds.
1926	33,916,900 sq. yds.
1927	29,685,770 sq. yds.

It is significant, also, that the bulk would have been much less last year had it not been for the large amount of cambric and sheer linen exported in the piece for making up in American handkerchief factories. By this procedure the cloth pays a tariff of only 35% compared with 45 to 75% when hemstitched and made up into handkerchiefs.

British Dominions' linen buying during 1927 was probably 5% less than in 1926, the deficiency being from Canada (with a drop of 20%) and the West Indies. However, South American buying has improved by 16.66%; and, curiously, even European buying of linen piece goods was better even though most of these countries are now active rivals as linen producers.

A Few Hopeful Items

If the damask improvement is small, it shows steady advance and especially in the United States. Here the advertising campaign has made "Impressively Correct" damasks a slogan from East to West and it may be that a similar campaign will be undertaken in the United Kingdom.

The export of handkerchiefs, not in the piece, shows a marked rise of about 20% more than during 1926 and probably 40% more than in 1925. In fact, since the total value of these 5,544,000 dozen handkerchiefs represents probably well over five million dollars, it can be seen that this branch is now an important one in the linen industry. Its future is bright also, for orders now in hand will keep plants busy for some months.

The Irish linen producer of today is in a quagmire of difficulty no matter what direction he looks toward. The American tariff curbs his energies abroad and the want of a similar home tariff—for the British Government absolutely prohibits protection to its linen industry—allows his European rival producers to dump their goods on his markets and even in Belfast itself. Thus during 1927 imports of foreign linen goods to the United Kingdom were valued at $5,831,325, or $286,010 more than during 1926 and 60% more than during 1925. It happens that not alone is the British linen producer struggling under a burden of war debt and other taxation, but he must pay 80% more in wages than do Continental mills. Thus while the average wage in Belfast is $5.75 for a 48-hour week the corresponding wage in Belgium and Czecho-Slovakia is less than $4 for a 50 to 52-hour week. But there is no hope of any relief in the near future.

Frankly the outlook for Irish linens is far from roseate. Flax is scarce and must remain at luxury quotations for at least six or eight months. However, high linen prices do not always mean depressed buying, if only prices are stabilized. It will only be by immediate stabilization of quotations together with a big "push" for orders, that 1927 will be a year of bright results.

THE TEXTILE OUTLOOK

Textile Curtailment is Exactly Proper Remedy to Increase Manufacturing Margins, Says Dr. L. H. Haney

THE current trend of business is mixed. Probably the average condition is one of sidewise movement. This condition of irregularity means that there is little indication of either expansion or recession. Nevertheless definite signs of improvement have occurred and it is probable that the future trend of business will be upward. At present it is likely that a definite upturn will be in evidence by February and that this will gain momentum in the early spring and carry at least through the first half of the year.

Signs of Improvement in Business

The preponderance of business data recently received is favorable. The further rise in the P-V Line indicates continued improvement in the way of an adjustment of supply to demand, and stronger commodity markets. ***The sharp rise in unfilled steel orders reflects good buying of steel and may be taken to mean that the buyers of that commodity realize that prices are as low as can be expected.*** This evidence is supported by a little greater strength in pig iron prices. Retail trade gained smartly in December, continuing the recovery begun in November. Mail order, chain store, and department store sales were all higher, making due allowance for seasonal conditions. Retail sales are above normal, showing that in spite of the decline in employment and payrolls, the people are still able and willing to buy in large volume. Building contracts awarded decreased less than usual last month, which means a further rise in our seasonally adjusted curve. Building permits and contemplated new construction were a little lower, but are still considerably above the low point of the year. Sustained normal construction is in prospect.

No real improvement has yet appeared in the total volume of industry as measured by freight traffic; and other weekly data, aside from those bearing on the steel industry, show much irregularity. So broad and basic is the steel industry, however, that the gains here have great significance. The United States Steel Corp. was estimated last week to be operating at 80% of capacity, against 75% the preceding week. Increased buying from automobile manufacturers is a big factor and buying by railways also shows improvement. ***Pig iron prices continue to firm up, which is one of the most significant facts of record.***

The most recent favorable developments are as follows: (1) Commodity prices are firm to rising, pig iron higher; (2) general improvement exists in the iron and steel industry; (3) the call loan market is easy; (4) bonds are about steady.

Among the less favorable changes are: (1) a further decline has occurred in factory employment and payrolls; (2) exports have declined; (3) reserve banks show some tendency to reduce their holdings of Government securities, thus tightening bank credit; (4) firmer money markets are shown by the higher time money rates and advances in bank acceptance rates.

Textile World Analyst

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

SUMMARY—GENERAL

1. The present trend of general business is irregularly sidewise, but signs of definite improvement have appeared and recovery during the next six months is probable.

2. Cotton mill securities show a mixed trend, New England mill stocks declining further as output curtailment is forced by narrowing margins. Curtailment is exactly the remedy and will soon increase the spread between raw materials and textile products, to the benefit of holders of mill securities.

3. Wool manufacturers' margins continue to decline as a result of the increased cost of raw materials. But, while no improvement is yet in sight, present prices of wool stocks appear to discount the worst.

Retail Trade Recovers

In spite of the rather steady decline in employment and payrolls, the ***total volume of retail trade in the country, according to our estimates, increased about 6% in December and was nearly 11% above the low point reached last October.*** Retail sales were considerably below the August peak of 1927 and were probably little, if any better than in December, 1926 (though mail order and chain store sales gained during the year), but, after eliminating a full allowance for the usual percentage of increase in holiday business, a net upward trend remained that is distinctly favorable. Sometimes a sharp reversal occurs in January, as in 1926 and 1927, and occasionally this setback precedes a period of weakness in the stock market. We will, therefore, watch January results in retail trade very closely. For the present, however, it can be said that there is no indication of a further general business recession, while the volume of merchandise taken by consumers is above normal and increasing.

Some facts bearing on the present level of retail trade are shown in the following statement, the figures being index numbers with 100 representing "normal":

	Dept. Store	Mail Order	Composite Retail Trade	5 and 10c Chains
Dec. 1926.	101.8	113.3	108	127
Nov. 1927.	97.0	109.4	103	116
Dec. 1927.	99.6	121.9	111	135

Considering the season, the sales of the 5 and 10 cent chain stores made a new high for all time. Mail order sales are only a little below the record high. Evidently, these types of retail stores have been prospering and the trend is still upward. Department stores as a group, however, have done little better than hold their own and if allowance were made for a factor of normal growth they would appear to have hardly done that well.

Cotton Mill Securities Show Mixed Trend

The price of 25 New England cotton mill stocks averaged 73.24 in December, compared with 75.04 in November and 80.11 a year ago. The index of southern mills security prices continued to move up to an average of 133.8 in December, against 133.2 in November and 127.1 a year ago. The divergence between the southern and New

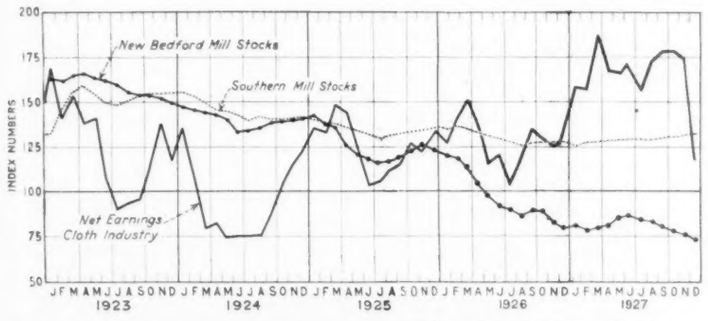

New Bedford Mill Stocks
Southern Mill Stocks
Net Earnings Cloth Industry
INDEX NUMBERS
200
175
150
125
100
75
50
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1923
1924
1925
1926
1927

Fig. 1. COTTON MILL EARNINGS AND SECURITY PRICES—Net Earnings in Cotton Cloth Industry—Computed from the cost of raw material, labor, fuel, etc., the price of finished goods and the volume of production (New York University, Bureau of Business Research). New Bedford Mill Stocks—Average price 25 New Bedford Cotton Mill Stocks (New Bedford Standard). Southern Mill Stocks—Average price 25 Southern Cotton Mill Stocks (R. S. Dickson & Co.).

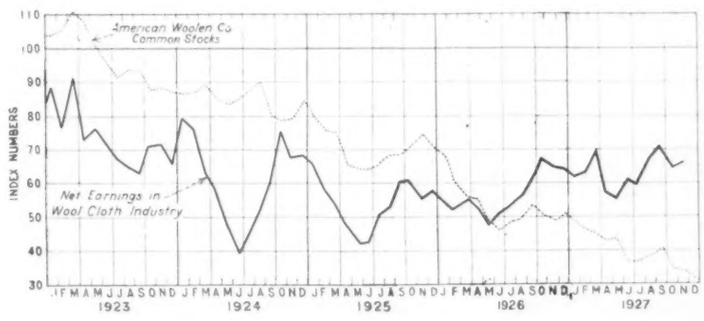

American Woolen Co Common Stocks
Net Earnings in Wool Cloth Industry
INDEX NUMBERS
110
100
90
80
70
60
50
40
30
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1923
1924
1925
1926
1927

Fig. 2. WOOL MANUFACTURING EARNINGS AND WOOL MILL COMMON STOCKS—Net earnings in Wool Cloth Industry—Computed from the cost of raw material, labor, fuel, etc., the price of finished goods and the volume of production (New York University, Bureau of Business Research). Wool Mill Common Stocks—Average of American Woolen Co. Common and Arlington Mills Stocks.

England mill stocks reflects the conditions attending the curtailment of production that has been going on in New England. The takings of spinners show a marked contrast with those of a year ago. Up to Jan. 13 ***southern mills' takings had increased, while those of New England had fallen below last crop year's total to date.***

The volume of sales of cotton goods has been unsatisfactory for some months, and production had to be curtailed to bring it in line with demand. December mill consumption was the lowest for the month since 1924. The drop in the volume, combined with a narrowing operating margin, brought about a sharp decline in our index of estimated net earnings. This index has had three successive months of decline and is now at the lowest point in a year and a half. Since the bulk of curtailment has been in New England, the securities of the mills in that section have been most affected. ***The reduced output and wage cuts in that section indicate that New England mills are thoroughly aroused to their situation and are taking effective measures to correct it. They should be ready to benefit by the improvement in operating margins which are certain to follow.***

Operating margins are becoming more stable for several reasons. Primarily, the drop of 4c or more per pound of raw cotton during the fall of 1927 is beginning to be felt in lower costs for raw material. Due to the lag between the purchase of the raw cotton and the sale of the finished cloth, the tendency toward lower cost raw material will be felt for another month or two. Labor and fuel costs have both declined lately. The result is that, although cotton cloth prices have also declined, the margins are tending toward stability, and continued mill curtailment will bring a gain before long.

On a current replacement basis, the margins of cotton cloth manufacturers as well as of spinners have declined since October, and are only slightly better than a year ago. The Analyst has previously pointed out that the replacement margins declined from October, 1926, to July, 1927, and gave as its opinion that the decline begun in October, 1927, will not follow the same course. There is no reason now why raw cotton should have a constant rise for the first half of 1928 as it did in 1927. Until acreage figures are given out, raw prices will probably be more stable. However, with raw cotton nearly 7c a pound greater than last year, it cannot be considered very cheap and will suffer in competition with silk.

The downward trend in New England cotton mill security prices should be checked during the next month or two. They have probably discounted the worst. But no sustained upward movement is probable. Whether or not the southern mill securities will follow the downtrend of New England mill prices, as in the 1923-1924 crop year, will depend largely on curtailment policies.

Wool Mill Securities Near Lows

Due to the drop in raw wool prices early in 1927, the operating margins of wool manufacturers improved until late in the summer. Then the steady advance in wool prices which began in June, made itself felt in increased costs. As a result, the operating margins have been declining slowly since September and, although the volume of wool consumed was fairly large, our index of estimated net earnings reached its 1927 high in September.

On a current replacement basis the margins of wool cloth manufacturers have declined since May to the lowest point since early 1925. The worsted yarn margin advanced during the summer, but since September has declined to the lowest point in our nine year record.

The securities of wool manufacturers during 1927 declined until June, advanced during the summer, and have fallen off since September. Our index of 31.6 in December was the lowest point in 1927 and, in fact, the lowest in the seven-year period which we cover. American Woolen common passed its low point of 1927 in June and reflected more closely our estimated net earnings index which had touched bottom in May. Arlington Mills common, however, fell to a new low in December, in which respect it resembled more closely the trend of current replacement margins.

The outlook for wool mill stock prices is unfavorably affected by the continual advances in raw wool prices which will probably reduce the manufacturers' operating margins for some months to come. Cloth prices have recently shown a tendency to advance, but the increases are small in comparison with those in raw wool.

We feel that the decline in yarn is nearly at an end and that cloth prices may advance further, but that no decline in raw wool prices is yet in sight. The profit margins, therefore, do not show much prospect of early or sustained improvement. They will probably not get much worse and will soon be stabilized, however, and it still seems that securities are near their lows for the present move.

To Simplify Adhesive Plaster and Surgical Gauze Products

A general conference on the simplification of adhesive plaster and surgical gauze products is scheduled for 10:30 a. m. Wednesday, Feb. 15, at the Drug & Chemical Club, 85 John St., New York city.

The Simplified Practice Committee of Manufacturers of Adhesive Plaster and Surgical Gauze have prepared proposals for simplifying their products and have requested the Division of Simplified Practice of the Department of Commerce to organize a general conference and it is under the auspices of this department that the conference is to be held.

Missouri Valley Tent Makers Elect

KANSAS CITY, MO.—R. P. Jackman, of the Wichita-Ponca Tent & Awning Co., of Wichita, Kan., was elected president of Missouri Valley Tent and Awning Dealers' Association, which held a meeting here last week at the Hotel Baltimore.

Joseph Dilg, of St. Louis, was elected vice-president,, and Alfred S. Boije, president of the Mid-West Tent & Awning Co., of this city, was made secretary and treasurer. One hundred and ten awning and tent manufacturers and dealers attended the meeting, from Oklahoma, Missouri, Kansas, Iowa, and Nebraska.

Skenandoa Rayon Corp., Utica, N. Y., is said to be planning the construction in 1928 of an additional unit which will double the capacity of the plant.

To Observe Thorp Centenary

Cotton Manufacturers to Honor John Thorp at April Convention in Providence

COTTON manufacturers will celebrate the 100th anniversary of the invention of the principle of ring spinning, a development that revolutionized the industry, at the spring meeting of the National Association of Cotton Manufacturers, to be held at the Hotel Biltmore, Providence, R. I., Wednesday and Thursday, April 25 and 26. John Thorp, whose first ring spinning patent was issued Nov. 20, 1828, while he was a resident of Providence, will be suitably honored with a session wholly devoted to his accomplishment and that of other textile pioneers, in the old Slater Mill, Pawtucket, which is now a museum and which was the first successful cotton mill in this country.

Although Thorp spent all of his life in New England and many years in Rhode Island his name is almost unknown to the general public even in Providence. His series of inventions, in addition to ring spinning all proved of great value to this section of the country as well as other textile centers in the world. Rhode Island has already begun to prepare for the cotton convention which is to do honor to Thorp. The Rhode Island Textile Association, Southern New England Textile Club, the Providence Chamber of Commerce and other organizations are cooperating with the National Association of Cotton Manufacturers in making preliminary arrangements.

The general convention program provides for registration at 11 o'clock Wednesday morning, April 25, in the Providence-Biltmore headquarters. There will be a business session in the afternoon and a smoker in the evening.

The Thorp Centenary Session will be held at the Old Slater Mill at 10.30 a. m., Thursday, April 26. In the afternoon there will be a business meeting at the Providence-Biltmore and the centenary observance will be brought to a close with a banquet in the evening.

Col. G. Edward Buxton, president of the National Association is general chairman, and W. B. MacColl, Pawtucket, vice chairman of the committees on arrangements; Philip C. Wentworth, Providence, is in charge of the smoker; Henry C. Dexter of Pawtucket, in charge of Slater Mill meeting; F. W. Howe, Providence, in charge of finances; Alexander West, Providence, in charge of transportation, and John F. Reardon, president of the Southern New England Textile Club is in charge of arrangements for the banquet.

"DO YOU KNOW?"

How is the curl effect on Montagnac overcoating produced?

How can a false stopping of the loom by the center filling stop motion be prevented?

Do you know the relation between the prospect for weevil damage and the probable acreage for the new cotton crop?

How should goods be desized for mercerizing in the gray?

What are the principal constituents of linoleum cement?

How does a certain successful department store classify its stocks as related to their style appeal?

What shades does the present range of naphthol colors allow?

What is the present condition and the trend in the linen industry in Ireland and how is this related to linen imports into the United States?

How can selvages be prevented from rolling during fulling?

If you are interested in the answers to these questions, you will find them in articles in this issue.

WITH THE EDITORS THIS WEEK

Editors: Charles H. Clark, Vernon E. Carroll, Clarence Hutton, Douglas G. Woolf — *We Believe in the Conservation and Protection of Domestic Industries*

To Honor John Thorp

GREAT inventors, whose genius, vision and sacrifices lifted the textile industry from a hand to a machine and factory basis, deserve all the honors that have been or may be accorded them. In most instances they were creators in the true sense of the word, devising new principles without experience to guide them.

Of this country's pioneer textile inventors only Eli Whitney and Samuel Slater have been adequately honored. Now, 100 years after his invention of the basic principle of ring spinning, which today is of far greater value and importance to the world textile industry than mule spinning, John Thorp of Providence is to be given his first official recognition by the industry. The National Association of Cotton Manufacturers, with the Southern New England Textile Club, the Rhode Island Textile Association and other organizations cooperating, will dedicate a session at the Old Slater Mill in Pawtucket to his honoring.

Of John Thorp's numerous textile inventions there is complete and unimpeachable record in the archives of the United States Patent Office. Of his birth, life and death, there are no records available at the moment. To this extent he seems to be a man whom nobody knows. Ever since last summer, when TEXTILE WORLD first suggested the celebration of the centenary of Thorp's invention of the principle of ring spinning, it has been engaged in research designed to locate facts regarding his life, but as yet only a few important facts have been unearthed. As we know that John Thorp was living in North Wrentham, now Norfolk, Mass., as late as 1844, it seems probable that there must be someone living whose parents or grandparents must have known of John Thorp and who may have heard of him through them. If any of our readers have such information, or are aware of any clue that by proper research may enlarge our knowledge of the life and work of John Thorp we hope that they will make it available to the editors or to the National Association of Cotton Manufacturers.

* * *

The New England Wage Cut

WAGE reductions of approximately 10 per cent initiated something over a year ago by cotton and wool mills in Massachusetts, which were followed a few months ago by a number of Maine and New Hampshire mills, have now become so general in the cotton industry that it will be difficult for any but the most advantageously situated mills in that section to maintain old wage rates and compete successfully. Most New England manufacturers believed, and still believe, that curtailment would prove a more effective remedy for existing industrial ills than a wage cut, but even where both remedies have been applied there has been only moderate improvement in sales thus far, and competition is so keen and interdependence between the various units of the industry on all items of cost is so great that majority action dictates competitive policy.

The whole price and demand situation at the moment is in a state of flux, with curtailment of production by the mills causing a decline in cotton futures prices, and with buyers temporarily absorbing a large part of the benefit to the mills of the latter and of wage reductions. It would seem as though the resistance to depressive influences displayed by prices of yarns and cloths ought to convince the majority of buyers that precedent is not a safe guide in the present market movement. They seem to forget that there is a new economic force at work in the cotton industry and that production curtailment is not only more general than heretofore, but is to be continued until conditions are stabilized. It will be surprising if many buyers do not awaken a few weeks hence to the fact that they have over-stayed the market, and that the recovery may then be both sudden and rapid.

THE TEXTILE TREND

Cotton Markets: January has been disappointing and far below same month year ago. Current weakness in cotton discourages forward trade in goods. Print cloths shade off fractionally. Gingham movement continues. Chambrays sought for nearby. Denims quieter. Jobbers adopt cautious attitude. Ginnings to Jan. 16 at 12,501,845 bales construed bearishly on market. Progress likely to be gradual.

Wool Markets: Weather is still blamed for sluggishness of wool goods. Retailers' stocks move slowly even at special sales and coats particularly lag. Retailer not interested in spring as yet and clothiers reflect this indifference. American Woolen opens staples, Monday, Jan. 30. Isolated cases of coatings opened at unchanged prices despite advance of 5 to 10c for spring. Worsted weaving yarns spotty. Fair demand for knitting yarns. Prices firm and trending higher.

Knit Goods: Hosiery sellers a bit more optimistic after visit of buyers to market last week. Buying however has been spotty. Fancies gain definite place in market. Wool hosiery appears to be gaining. Uncertainty continues in underwear market though no further price reductions are reported. Competition on cotton ribs for fall is keen. Fleeces are also affected. Buyers who were on market are returning to homes and a period of road work lies ahead.

Silk Markets: Broad silks show further improvement both in volume of sales and in steadiness of prices. Cutting-up trade increases takings of georgettes and prints. Silk prints prominent for ensembles with woolens. Department store buyers expected to operate heavily next month, and are already placing fair business. Raw silk remains steady and mill operations further increase.

According to Sample

"I CANNOT get my mill to make samples for me which are any better than the general run of merchandise which they deliver to my customers." This is the remark of a representative agent for knit underwear in the New York market who went on to say "It is an art to make samples. I know some manufacturers who employ skilled operatives to make nothing else. These samples are not representative of the goods which are finally delivered. I know, for I make it a point to see on retailers' shelves, the merchandise which is purchased from various mills with which I am acquainted."

This discloses a condition which is responsible, in a measure at least, for certain of the difficulties with which sellers of merchandise, whether knitted underwear or other classes of textiles, are confronted. If the manufacturer gets out a line of samples with no intention of delivering goods which are fully up to the standard indicated by these samples, he has no one but himself to blame if the buyer refuses to accept delivery. The latter individual is usually pretty well acquainted with the character of merchandise he buys, in spite of the exceptions who have little knowledge of lines of which they are supposed to have detailed information. Attempts to substitute one line for another usually result in disaster to those who are guilty of this substitution. This sort of practice is to be deprecated for it destroys the buyer's confidence in the character of fabric or garment which the manufacturer is supposed to deliver.

Of course there is always a temptation for the buyer to find fault with merchandise, especially on a declining market, but it must be admitted that there is equal temptation for the manufacturer to cheapen his product in some way on such a market in the hope that this cheapening will not be discovered and that he will be able to "get by." Instances of this character are altogether too frequent in the manufacture and sale of textiles. They have been particularly apparent in the silk field during the last few months. In this division there has been an epidemic of "cancelitis.' Every imperfection is seized upon as an excuse either for canceling or making a claim on the merchandise delivered. It is peculiar how easy it is for buyers to use merchandise on which they secure a claim which according to their assertion is impossible to sell at the original purchase price. The seller usually determines that the easiest way is to allow the claim because if the goods are returned he is obliged to sell them as a rule on a lower market and the claim does not mean as much in the restriction of profits as a resale.

In these days of intense competition on almost every line of textiles there never was such a necessity for honestly made goods fully up to sample in every particular which the

manufacturer can stand behind of and absolutely refuse to consider cancellations or claims thereon because of his knowledge as to their intrinsic merit. It is true the average manufacturer has comparatively little incentive to make quality goods because buyers are apparently centering their endeavor on securing merchandise at a price. At the same time the wise manufacturer and selling agent appreciate that in the long run their reputation is going to be enhanced by delivering goods on which they can justify a firm stand against the efforts of buyers to secure them at a lower figure by pressing for claims which have little foundation.

American Woolen Opens Staples on Jan. 30 and Reduces Terms

The American Woolen Co. will open on Monday, Jan. 30, staple men's wear fabrics for the fall, 1928, season. The showing includes serges, French-backs, unfinished worsteds and cheviots, plain and fancy weaves in Dept. 1 and London-shrunk serges in Dept. 7.

The American Woolen Co. has, for the first time since its foundation, changed its terms on men's goods. Effective on Monday the new terms will be a 3%-30 days, or 1%-60 days, or net 4 months, with season's dating against the basis heretofore prevalent of 10%-30 days, 8%-60 days, 7%-4 months. At the same time the increased discounts to clothiers for volume purchases will also go into effect. The dating is June 1 for fall lines and Dec. 1 for Spring.

The big company must readjust its cloth prices to reflect the change in selling terms, and in this way possible advances of more or less material effect will lose their adverse influence on buyers.

Foresees Tariff Revision

Hon. Frank Crowther told the directors of the National Knitted Outerwear Association at their dinner, last Friday, that tariff revision is certain in the next Congress.

Following a banquet at the Hotel Astor, J. J. Phoenix, chairman of the Association's Tariff Committee, introduced Mr. Crowther, emphasizing the need for definitely organized education to offset the efforts of selfish interests toward lower tariff, and called attention to the absolutely inadequate protection now afforded on some knitted outerwear items.

Mr. Crowther denounced those interests who are now by continuous propaganda building a serious menace to the protective policy, whose patriotism is of the stripe that places their foreign investments ahead of domestic purchasing power and American prosperity. The international bankers were stated to be by far the strongest influence now demanding lower tariff.

Carders of S. T. A. Discuss Responsibilities of Overseers

COLUMBIA, S. C.—The Carders Section of the Southern Textile Association at the meeting held in Columbia, S. C., Jan. 25, discussed responsibility of cotton mill overseers from the employer and employe standpoints.

J. O. Corn, superintendent of the Hampton Division of Pacific Mills and chairman of the section, led the discussions.

Boston Wool Trade Banquet

Wool Merchants and Notable Guests Enjoy Social Evening Together

THE annual banquet of the Boston Wool Trade Association was held at the Copley Plaza Hotel, Boston, Thursday evening, Jan. 26. Some 600 members and their guests were present. A notable assemblage of wool merchants, woolen and worsted manufacturers and bankers had a pleasant evening together. Although there were no set speeches optimism was rampant. Higher prices were in the air and a good manufacturing year was generally conceded.

At the head table were seated representatives from the large manufacturing organizations of the country; Andrew G. Pierce, president of the American Woolen Co.; R. L. Keeney, president of the American Association of Woolen and Worsted Manufacturers; Edward Moir, president of the Carded Woolen Manufacturers Association; Herbert J. Webb, representing Charles J. Webb, president of the Philadelphia Textile Manufacturers Association; J. J. Nevins, secretary of the National Association of Worsted and Woolen Spinners; Walter Humphries, secretary of the National Association of Wool Manufacturers; Franklin W. Hobbs, president, National Association of Wool Manufacturers; Hon. W. W. Lufkin, Collector of Port of Boston; F. Nathaniel Perkins, secretary of the Boston Wool Trade Association and last but not least, A. W. Elliott, president of the Boston Wool Trade Association.

The banquet on the whole was one of the best ever held by the association. Careful planning by the house and entertainment committee had arranged for every detail and the entire meeting was voted a huge success. The chairman of the house and entertainment committee was Paul M. Rice of the American Woolen Co. Other members of the committee were as follows: H. Clayton Beaman, Jr.; Harry M. Bloomfield, Clinton C. Brown, Robert W. Dana, L. U. Edgehill, Albert W. Elliott, John F. Howe, Durham Jones, Percy B. Kincaid, Robert J. Koshland, F. H. Montgomery, F. Nathaniel Perkins, Percy E. Sheldon, Arthur O. Wellman and John Whitman.

The wool trade which has a number of men of musical talent within its ranks, had organized for the occasion a company of young men who appeared on the program as the "Woolverines." The varied music they rendered was enthusiastically received. There was considerable "community" singing under the leadership of the orchestra conductor. The most notable and rather unexpected feature of the evening was the showing of the Tunney-Dempsey fight film.

TEXTILE CALENDAR

Rhode Island Textile Association, Ninth Annual Meeting and Dinner, Providence-Biltmore Hotel, Providence, R. I., Jan. 30, 1928.

National Retail Dry Goods Association, Annual Convention, Hotel Pennsylvania, New York City, Feb. 6-10, 1928.

Associated Knit Underwear Manufacturers of America, Annual Meeting, Utica, N. Y., Feb. 15-17, 1928.

Weavers Division, Southern Textile Association, Regular Meeting, Clemson College, S. C., Feb. 22, 1928.

Committee D-13, American Society for Testing Materials, Spring Meeting, Providence-Biltmore Hotel, Providence, R. I., March 8-9, 1928.

Master Mechanics Division, Southern Textile Association, Regular Meeting, Charlotte, N. C., March 21, 1928.

Knitting Arts Exposition, Commercial Museum, Philadelphia, Pa., April 16-20, 1928.

National Association of Cotton Manufacturers, Spring Meeting, Providence-Biltmore Hotel, Providence, R. I., April 25-26, 1926.

Dyers, Finishers and Bleachers Division, Southern Textile Association, Charlotte, N. C. (date to be announced).

Textile Division, American Society of Mechanical Engineers, National Meeting, Boston, Mass., May, 1928 (date to be announced).

Spinners Division, Southern Textile Association, Regular Meeting, Lake Lure, N. C., May 16, 1928.

International Association of Garment Manufacturers, Annual Meeting, Hotel Stevens, Chicago, May 22-24, 1928.

Eastern Carolina Division, Southern Textile Association, Regular Meeting, Kinston, N. C. (date to be announced).

Alabama - Mississippi - Louisiana Division, Southern Textile Association, Regular Meeting (date and place to be announced).

Southern Textile Association, Annual Meeting, (date and place to be announced).

American Cotton Manufacturers Association, Thirty-second Annual Convention, Richmond, Va., during latter half of May 1928 (exact date not set).

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 15-20, 1928.

Bids on Underwear and Cotton Goods Opened by Quartermaster

PHILADELPHIA.—Bids on summer underwear were opened by the Depot Quartermaster, U. S. Army, 21st & Oregon Ave., Jan. 23, for supplying 340,000 undershirts and 307,500 underdrawers, the following concerns submitting proposals: Oneita Knitting Mills, Utica, 30.25c on item one and 37.5c on item two; Cheltenham Knitting Co., Philadelphia, 22.95c on item one and 35.95c on item two; Utica Knitting Co., Utica, 33c on item one and 44c per pair on item two; Norwich Knitting Mills Co., Norwich, N. Y., 27c on item one and 39c on item two; Fuld & Hatch Knitting Co., Albany, N. Y., 27.5c on item one and 34.5c on item two; E. M. Townsend & Co., New York, not less than 100,000 on each item, 27 6/100c on item one and 27 79/100c on item two; Belgrade Knitting Mills, New Cumberland, Pa., bidding on 68,000 only, 42.5c item one; Everett Norfolk Co., Lebanon, N. H., prices on various quantities item one ranged from 17 5/100c to 18 92/100c depending upon size specified, and 24 87/100c to 27 56/100c on item two depending on quantity and sizes specified in contract.

Proposals were also opened to furnish various textile fabrics. Item one, olive drab silesia; item two, Albert olive drab twill cotton cloth; item three, handkerchief cloth; item four, denim; item five, denim; item six, cotton sheeting. The following bids were received on the above items: S. B. Marks Co., New York, item six only, 15.88c per yd.; McCampbell & Co., New York, item one, 18.5c; item three, 16.5c; item four, 16.86c per yd.; Duntex Mfg. Co., item one, 19.25c; item three, 16.75c per yd., item four, 19c per yd., item five, 24c per yd.; Parker, Wilder & Co., New York, item six, 15.25c per yd.; Marshall Field & Co., Chicago, item four, 19c per yd., item five, 23.75c; Samoset Cotton Mills, Boston, item four, 17.6c per yd.

Batavia Mills, New York, item one, 16.38c per yd., item two, 20.89c per yd., item three, 14.12c per yd., item four 17.68c per yd., item five, 22.68c per yd., item six, 15.88c per yd.; Cannon Mills, New York, bidding on entire quantity only, item six, 16.5c; Hudson & Boas, New York, item one, bidding on 18 to 20,000 yds., only, 19.24c; item two, bidding on 9 to 10,000 yds., only, 22.5c; National Fabric & Finishing Co., item one, 18 625/1000c per yd., item two, 25 25/100c per yd., item three, 17.5c per yd.; Moe Rosenberg, New York, item one, 16/74c per yd., item two, 22.97c per yd., item three, 14.94c, item

(*Continued on page 102*)

THE PERSONAL PAGE

R. L. Stowe, prominent textile manufacturer and capitalist of Belmont, N. C., was re-elected president of the Bank of Belmont at the annual stockholders meeting last week.

B. B. Gossett, president and treasurer of Chadwick-Hoskins Co., Charlotte, N. C., was chairman of the committee which made arrangements for the entertainment of Secretary Mellon and other visitors who came to Charlotte last week to celebrate the opening of a branch of the Federal Reserve Bank.

Governor McLean has appointed **J. E. Latham**, of Greensboro, president of Pomona Mills, Inc., a member of the board of trustees of the Stonewall Jackson Training School, Concord, N. C., succeeding J. S. Efird, of Albemarle, deceased.

Hyman Solomon has resigned as president and disposed of his interests in the Revere Knitting Mills, Inc., Malden, Mass.

William M. Coates, Coates Bros., Philadelphia, was recently re-elected president of the Philadelphia Board of Trade at their annual meeting held in the Bourse Bldg., 5th St., below Market, Mr. Coates having held this office for many years.

H. C. Finch, of the Broadalbin (N. Y.) Knitting Co., Ltd., was elected president of the Broadalbin Bank at the annual directors' meeting. **B. C. Smith**, general manager, was chosen vice-president.

Dennis T. Noonan, president of the Berkshire Woolen Co., and the W. E. Tillotson Mfg. Co., both of Pittsfield, Mass., is a candidate for election as alternate district delegate to the Republican national convention at Kansas City in June.

William J. Crawford, senior member of the firm of Crawford & Tyler, North Dana, Mass., will observe his 92nd birthday anniversary on Feb. 1.

George E. Kunhardt, president of the George E. Kunhardt Corp., Lawrence, Mass., and Mrs. Kunhardt, sailed on the S. S. President Polk on Jan. 19 on a cruise around the world.

Charles E. Leippe, Reading, Pa., past president of the National Association of Hosiery & Underwear Manufacturers, has been elected a trustee of the Homeopathic Hospital at Reading.

R. Z. Cates, Jr., president and treasurer of Arkwright Mills, Arkwright, S. C., established a record for altitude at Spartanburg when he recently soared 13,000 ft. in a Pitcairn airplane.

John F. Tinsley, vice president and general manager of the Crompton & Knowles Loom Works, Worcester, Mass., and **E. Kent Swift**, treasurer and general manager of the Whitin Machine Works, Whitinsville, Mass., have been reelected directors of the Second National Bank of Boston. **J. Whitney Bowen**, treasurer of the Flint Mills, Fall River, Mass., was added to the board.

An inventory of the estate of **George S. Cox**, head of Geo. S. Cox & Bro., Philadelphia, was filed last week showing personal property appraised at $2,106,833. Mr. Cox died March 18, 1926 and his will provided upon his death a trust fund be used to establish a medical research bureau, primarily for the purpose of discovering a cure for diabetes or for any other use the medical director of this fund may deem best.

Walter Humphries of Boston, secretary of the National Association of Wool Manufacturers, spoke before the annual convention of Idaho Wool Growers on Jan. 17. Other wool specialists who addressed this conference were **R. A. Ward** of Portland, chairman of the recently formed wool marketing council; **Murray Stebbins**, secretary of the Montana Wool Growers Association, and **J. A. Hill** of Wyoming.

A. W. Shuttleworth, vice president of the Mohawk Carpet Mills, Inc., Amsterdam, N. Y., was elected president of the Chamber of Commerce of that city at the annual organization meeting.

James W. Cox, Jr., New York, consulting textile expert, gave an illustrated talk on "The Manufacture and Finishing of Cotton Cloth," at the textile meeting of the Western Massachusetts section of the American Society of Mechanical Engineers which was held in the Hotel Nonotuck, Holyoke, Mass., on Jan. 24.

Joseph W. Booth, agent and treasurer of the George E. Kunhardt Corp., Lawrence, Mass., has resigned to accept a similar position in New York. **George E. Kunhardt, Jr.**, will succeed him as treasurer.

L. E. Warnick is one of the newly elected directors of the Atlas Knitting Co., Amsterdam, N. Y., and will also serve as assistant treasurer during the ensuing year.

John E. Thayer, Jr., a director of the Hamilton Woolen Co., Southbridge, Mass., has been elected president of the Clinton (Mass.) Trust Co. James R. Lister, agent for the Roubaix Mills, Inc., and John Davidson, superintendent of the Bigelow-Hartford Corpet Co., both of Clinton, were elected directors.

A. H. Robbins, general manager of the Eureka Cotton Mill and the Springstein Mills, Chester, S. C., has been made a director of the National Exchange Bank, of that city.

William H. Turner, general manager of the Hillside Cotton Mills, LaGrange, Ga., has been elected a director of the LaGrange National Bank and the LaGrange Savings Bank.

Smith Medlin, former manager of the Marshville Cotton Mills, Marshville, N. C., has been promoted to general manager of the entire chain of Morgan mills and has moved to Laurinburg, N. C. He is succeeded at Marshville by his brother George Medlin.

C. R. Ewing has been made assistant manager of the Central Franklin Process Co., Chattanooga, Tenn., to succeed J. D. Murray.

S. N. Daniels, general sales manager of the Utah Woolen Mills at Salt Lake City, is scheduled to speak on the program of the Pacific Northwest Sales Conference of Specialty Salesmen which is to be held in Portland, Ore., in February.

F. G. Daniels, managing director of the Dominion Textile Co., Ltd., Montreal, Canada, has been on a business trip to textile centers in New England.

Capt. Herbert Hartley, commodore of the United States Lines and commander of the SS. Leviathan, who tendered his resignation early this week, is to become associated with the Pepperell Mfg. Co. as manager of its Atlanta office. Capt. Hartley's resignation becomes effective Feb. 1, following which he will spend about a month at Pepperell's New York office and will then make his headquarters in Atlanta.

George L. Gilmore, proprietor of the Middlesex Bleach, Dye & Print Works, Somerville, Mass., and president of the Textile Research Council, and Mrs. Gilmore, are leaving this week for a vacation of some three months in Hawaii.

C. M. Owen, cotton buyer for the Dominion Textile Co., Ltd., Montreal, Canada, has been elected president of the Little Rock, (Ark.) Cotton Exchange. So far as is known this is the first time that a cotton exchange has elected the representative of a cotton mill as its president.

Sydney Bluhm, of Greensboro, N. C., cotton buyer for the Cone mills in that city, attended the meeting in Washington last week, of growers, manufacturers and shipping associations of the cotton industry, held at the Department of Agriculture there. The meeting was to discuss questions relating to the selection of cotton for use in making practical forms of staple standards, as authorized by the United States cotton futures and cotton standard acts. Mr. Bluhm went as a representative of the American Cotton Manufacturers Association.

George S. Rich, purchasing agent and office manager for the Hamilton Woolen Co., Southbridge, Mass., an employe for 20 years, has severed his connection with the company. Other officials who have resigned are J. Earl Eaton, for six years assistant purchasing agent and Raymond G. Plympton, civil engineer. Frank P. Williams, paymaster, has been placed in charge of the maintenance department and Frank H. Darling has been promoted to succeed him as paymaster.

Allyn B. McIntire, now New England manager for Barton, Durstine & Osborne, Inc., advertising agency, is to become director of sales development in charge of advertising and market research for the Pepperell Mfg. Co. Mr. McIntire will shortly visit Italy, France, and England in the interest of Pepperell.

Joseph V. Laughnane, stockholder and executive in the office personnel, in charge of dyehouse, Hamilton Woolen Co., Southbridge, Mass., severed his connection with the company on Jan. 21.

M. M. Trotter, general superintendent of the Manchester (Ga.) Cotton Mills, has been elected a director of the Bank of Manchester.

Edward Holden, Philadelphia, Pa., has been appointed superintendent of the new Elizabeth Bartlett Mills, Acworth, Ga.

George E. Luce, for many years superintendent of the Beaver Mills, Waterford, N. Y., is now connected with the firm's North Adams mill in an executive capacity.

J. R. Copeland, has resigned as superintendent of the Altavista Cotton Mills, Inc., Altavista, Va., which position he has held for several years. His successor has not been announced.

Henry J. Taylor recently arrived in Laurens, S. C., to become superintendent of the Pioneer Braid Corp.

Barney Norris, formerly of McColl, S. C., has accepted the position of machinist at the Morgan Cotton Mills, Laurel Hill, N. C.

John Small, for many years boss printer for the Slater Co., Webster, Mass., is now with the Pontiac (R. I.) Bleachery.

A. H. Watkins, overseer of No. 2 weaving at the Aragon-Baldwin Cotton Mills, Whitmire, S. C., has resigned.

George W. Emery, head of the carpentry department of the York Mfg. Co., Saco, Me., has resigned his position and will retire after 51 years of service with the company. Mr. Emery has been foreman of the carpentry department for the last 35 years.

Charles A. Wyman, overseer of weaving for the Horner Bros. Woolen Mills, Eaton Rapids, Mich., has resigned his position with that company to accept a similar position in Albany, N. Y.

David Walker, for the last seven years overseer of the burling department of the Arlington Mills, Lawrence, Mass., has resigned.

Eben Frazier, overseer of weaving for the Wakefield (R. I.) Textile Co., has resigned his position with that company.

C. C. Boswell has been appointed overseer of spinning at the Elberton (Ga.) Cotton Mills.

R. Elsemiller has resigned as superintendent of the seaming department of the Progressive Silk Mfg. Co., Amsterdam, N. Y.

E. J. Boswell is now overseer of spinning at the Georgia Mfg. Co., Whitehall, Ga.

Joseph P. Faron, former overseer of carding for the George H. Gilbert Mfg. Co., Gilbertville, Mass., has accepted a similar position at the Baltic Mills of the American Woolen Co., Enfield, N. H.

Richard Charlton, former overseer for the Southbridge Printing Co., and the Hamilton Woolen Co., both of Southbridge, Mass., has entered the Masonic Home in Charlton, Mass.

J. E. Coplin is now overseer of dyeing at the Monaghan Plant of the Victor-Monaghan Co., Greenville, S. C.

L. L. Holcombe has been appointed overseer of the lower weave room of the Monaghan Plant of the Victor-Monaghan Co., Greenville, S. C.

Michael J. O'Brien, overseer of the dyeing department and connected with the Brightwood Mfg. Co., North Andover, Mass., for more than a quarter century, has tendered his resignation.

W. F. Pettit, formerly of the F. W. Poe Mfg. Co., Greenville, S. C., is now overseer of spinning for the Darlington (S. C.) Mfg. Co.

Ernest Roberts, formerly with the Gray Mfg. Co., Gastonia, N. C., has accepted the position of overseer of carding in the plant of the Seminole Cotton Mills Co., Gastonia.

Manufacture of Montagnac

How Curl Effect Is Obtained on This Overcoating—Materials Used

By D. N. A.

MONTAGNAC is a very soft overcoating in which the face is covered with loops of soft stock, part of which are broken in the finishing to form the loops of fibers and part of which are intact. The loops on the face give it an appearance similar to a baby lamb, but it is not quite as lustrous nor are the loops quite as decided. The loop itself looks like hair

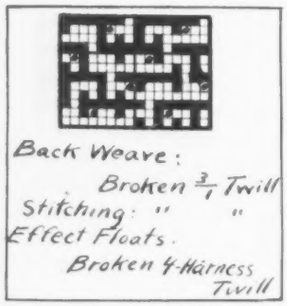


Fig. 1

that is curled with the curling iron but smaller, and they are more close together on the face. The fabric is loose and bulky.

The warp has an open set to allow a large quantity of filling to be woven into the cloth. The fabric is woven narrower than most coatings, as little, if any, fulling is required. The warp is of secondary consideration, being almost completely hidden on both face and back. The ordinary grades of these goods are made with ground and effect filling; the better grades with ground, back, and effect filling.

Wet Fibers Curl When Heated

The main idea in manufacturing of Montagnacs is that certain wools have an affinity to curl as soon as they are exposed to a very high temperature in

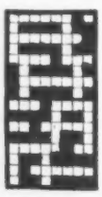


Fig. 2

their wet state. Cashmere wools have this tendency in a high degree, and consequently in the better grades the effect filling is made out of this particular wool. In some cases also a good quality of camel-hair noils can be used. In the cheaper grades, blends of cashmere and fine Australian would be satisfactory.

The effect filling which makes the loops is spun very open, just having enough twist to stand the weaving. This filling floats over a number of face warp ends and is either stitched in the order of a plain weave for a few ends or is passed under them.

The ground filling serves to bind the fabric together and give it durability. The back filling increases the thickness of the cloth and enables a fluffy finish to be obtained there.

Stocks of Same Shrinking Qualities

The ground and back filling are made of fine noils of the better grade. Of course there is a great deal of variation of blends for these two fillings. The cost of the cloth would be the most important factor, but the stocks must have the same shrinking qualities as the effect filling.

The less the wools for the effect filling are handled, the better they will curl. A 100% camel hair will curl easier than a blend of camel hair and wool, etc. A difference in the curling is also noted between the stock-dyed effect filling and the piece-dyed. The latter will curl more easily.

Finishing Operations

In the finishing after the goods have been burled and sewed, these processes depend on the grade of goods, the cheap ones being burled without

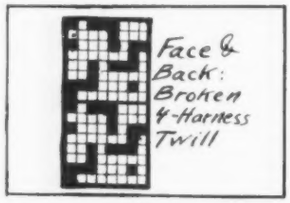


Fig. 3

any sewing. They are scoured thoroughly, and, if necessary, given a light fulling. If fulled, they have to be scoured clean again in the washer. Whether the fulling is necessary or not depends on the layout and stock used. After washing, they are extracted and given a few runs on the napper, sheared, and sent to the dyehouse. Some finishers prefer to send the goods to the dyehouse before they have any napping at all.

From the dyehouse they are extracted, finished-napped (that is, napped through the effect filling on its long float), dried, and brushed with a stiff brush to raise the nap. Then they are taken to a whipping machine, where the nap is made to stand up. Next they are passed over a fine spray into the dryer, where the heat causes the damp pile to curl up. It is absolutely necessary that no roller or other part of the machine touches the face while in the dryer.

Another method of finishing would be to take the cloth after extracting (after it has been dyed), finish napping it, then in the wet state whip it on the whipping machine, and pass it immediately into the dryer, where a heat of abou' 180° F. is necessary to curl the effect filling. After drying, the goods would only have to be sheared to be finished for the market.

Should the curls be too small, wet the cloth again, whip it, and pass into the dryer, which should have a temperature of about 200 to 210° F.

Weaves

The ground filling is usually woven plain. The back filling is either a plain weave, a 2/2 twill, a 3/1 twill, or a 4-harness broken twill. The effect filling is woven with a 4-harness broken twill or a 6-harness sateen weave where it is desired to scatter the flakes irregularly over the face. The floats may be arranged also to form stripes, straight or broken twills, herringbones, or any effect desired. (See weave at Fig. 1.)

Some Montagnacs are also made with a single warp and a face and

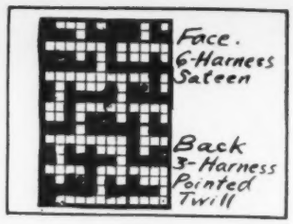


Fig. 4

back filling. (See weave at Fig. 2.)

Some have a separate back. Warp: one end of face, one end of back. Filling: one pick of face, one pick of back. (See weave at Fig. 3.)

Another construction is as follows: Warp: one end of face, one end of back. Filling: one pick of effect, one pick of stuffing, and one pick of back. (See weave at Fig. 4.)

Rolling Selvages in Fulling*

Prevented by Selection of Proper Weave for Selvage

By A. Farmer

ROLLING selvages are mostly encountered in fabrics where the face weave is different from the back; i. e., one side showing a warp effect and the other showing a filling effect, such as is the case with twills, broken twills, satins, etc. The selvages will roll on the side which has the filling effect, irrespective of whether it is face or back. This is caused by the greater shrinking power of the filling, and happens mostly when the cloth is purposely shrunk more in width than in length.

The rolling of the selvages takes place very quickly, depending on the rapidity of fulling, and as a rule is followed by the rolling of the whole piece. The holding and bending back of the selvages does not help much, as in a short time the piece is again in the same rolled condition as before. The consequence is that the fabric will be fulled less at the selvages because they are inside and are not worked by the hammers to the same degree as the rest of the cloth.

One remedy for this trouble is to provide the fabric with selvages of a weave different from that used for the body of the goods, and alike on both sides. Such weaves are the plain weave and its derivatives—rib, basket, and twill weaves (Figs. 1 to 5). If the take-up of the ground is not considerably different, the weave shown at Fig. 1 is the best. Otherwise, those shown at Figs. 2 and 3 must be used. In Fig. 2 it can be noted that two picks are in one shed and are lying very close together.

In Fig. 3 there is only one pick per shed, and two warp ends are working together, which causes the filling to be closely bound. Fig. 4 shows the basket weave, which takes up still more picks and is very suitable for double cloths. The twill weave shown at Fig. 5 can be used instead of the rib weaves, depending on the circumstances.

Fabrics which have the same amount of ends in the top as in the bottom of the shed do not require a special selvage. The same is true for double cloths.

In fabrics with satin weave care must be taken that the selvages are not thinner than the ground. A thick selvage shows less tendency toward rolling than a thin one. A good way to prevent rolling selvages is to tack the two selvages together with long stitches so that the fabric forms a bag.

Weaves Suitable for Non-Rolling Selvages

Rolling is then impossible, whatever be the condition of the selvages. If the piece should balloon too much, the seam must be opened for a few inches to allow the air to escape.

Fabrics that are fulled more or less warp-ways are not subject so much to rolling of the selvages, but they sometimes do turn over and lie double. It is, therefore, advisable to apply in all cases one of the above selvages in order to avoid the possibility of trouble.

*Translated from the German by H. R. Mauersberger and Theodore Burkhardt, both with James W. Cox, Jr., 320 Broadway, N. Y.

Green Valley Print Works, Cranston, R. I., is a new textile printing plant which will begin operation in the near future under the direction of F. D. Taylor.

Adjusting the Eccentric Motion and the Center Filling Stop Motion of the Wool Automatic Loom

Attention to Former Will Reduce Smashes, Broken Sticks, and Damaged Boxes — False Stopping

By B. F. Hayes

THERE are three or four important parts of the woolen or worsted automatic loom that must be fixed better than the corresponding parts on the ordinary loom. These are the stop motions (both warp and filling), the filling feelers, and the eccentric motion. There are others, but these four are the most important.

Only about 20% of the loom fixers know anything about the eccentric motion. Once when I was talking to a group of loom fixers about the benefits that could be obtained by intelligent use of this motion, one fixer who had been fixing looms many years remarked that, as both the fast and the slow motion must go in with one and every pick of the loom, he could not see that it made any difference just where he had the fast or where he had the slow. It makes a vast difference, just the same. The loom fixer who can set the eccentric motion to be suitable for the work involved will reduce the number of smashes, broken picker sticks, and broken shuttle boxes. I have been in mills where 50% of the boxes were broken by the shuttles being caught in the boxes. After shuttle boxes become broken, they damage the shuttles. They can be repaired, but it is doubtful if such repair work is profitable.

The warp stop motion has been improved. This we can see, and when out of order can very readily fix. The filling stop motion, however, is out of sight—at least, that is true of the working parts—and no man can discern any defect in the filling stop motion by watching it perform.

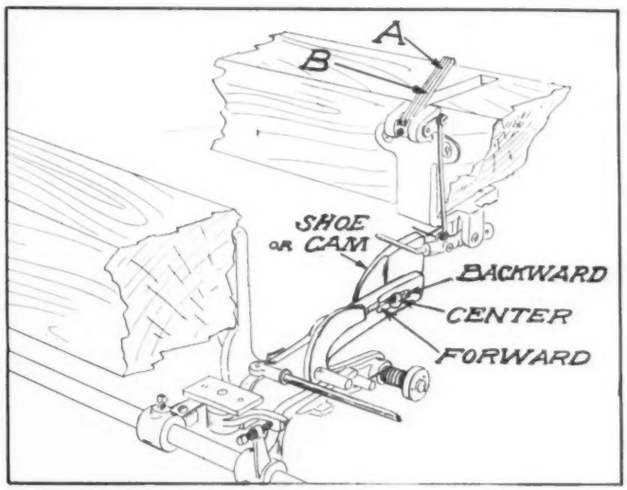
Center Filling Stop Motion

We should know more about this center filling stop motion. Very few loom fixers realize that it can be made to stop the loom *every time* the filling breaks or runs out. Any time that we have less than a complete pick of filling in the shed the loom must stop.

How is the filling stop motion going to stop the loom if the filling breaks after passing the filling stop motion? This remark has been hurled at me many times—in some instances by men of long experience. Many loom fixers will say with some feeling of pride that they always place the shoe or cam (see illustration) as far back as possible, and on some special occasions cut the shoe at the back so that they can tip it more, this tipping being equal to pushing the shoe still further back.

There are some weaves like the four-up-and-one-down satin, where the cloth is much narrower in the reed than the width of reed, for which it might be necessary to place the shoe as far back as possible to prevent false stopping. But we ought not to leave the shoe in this position when weaving, say, a cotton weave. With the satin weave, the filling lies loosely in the open shed, but with the cotton weave it lies in the equivalent of a closed shed, for all of the warp closes over or under the filling on every pick. If we leave the shoe in the same position for the cotton weave as for the satin weave, we shall have broken picks.

By the loom fixer saying that he pushes the shoe as far back as possible, he shows that he does not know what this excellent filling stop motion can do. It certainly will not stop every time the filling breaks or runs out on a cotton weave if the shoe is set back to the limit.



If we push back the shoe (or cam, as it is called), the feeler wires will bear on the filling at point A. This is all right for a satin weave. When we place the shoe or cam forward, the filling is caught by the wires at point B. This is the place for a cotton weave. Notice the leverage at point A as compared with that at point B.

Retain the Spring

In many instances when the fixer is having trouble with the loom stopping false, the first thing he will do is to take off the spring that presses down on the feeler wires. The spring that he takes off is about four times as strong as the feeler wire, but he puts a feeler wire in its place—usually throwing away the correct spring. In the first place, there is no need of taking off this spring, for it is equipped with a regulator so that, if the fixer desires to reduce the amount of pressure on the feeler wires, he can do so without discarding the spring. In spite of this fact we can go into many mills and not find one loom with the original spring on it. No filling motion can work up to the 100% efficiency without it.

There are thousands of looms on which the filling stop motion is only working up to about 50% efficiency because of poor adjustment. This means that weavers must pick out for broken picks, or broken picks must be sewed in after the cloth is woven. If the weaver picks out, there is a waste and loss of time and production. If the broken picks have to be sewed in, there is a large expense incurred. In some instances, no matter what we do, broken picks mean imperfect cloth. With correct adjustment of the filling stop motion there will never be any broken picks, and never be any false stopping.

False stopping was not a great detriment when weavers were running only one or two looms; but, when the weaver has as many as twelve looms, this annoyance should never be allowed. It was bad enough on old-style looms; it is out of the question on magazine looms.

Location of Motion

Although these magazine looms are built very well in nearly every respect, the filling stop motion, in the writer's opinion, has been placed out of center in the wrong direction. I contend that the filling stop motion is better out of center than in the center; but it must be so placed that it will equalize the tension on the filling. If the eye of the shuttle were in the center of the shuttle, the filling would reach equal tension in the center; that is, the tension would be the same as the shuttle passes from left to right. As it is, when passing from right to left, we cannot have the eye in the center of the shuttle. The only other way to equalize is to place the filling stop motion out of center.

To illustrate this more fully: On the magazine side, the eye of the shuttle passes up to the outer end of the box. When the shuttle comes back from this side, the eye must move the entire length of the shuttle and the distance from the box to the edge of the cloth before the filling becomes tight. If the shuttle is 16 in. long and the distance between the edge of the cloth and the shuttle box is 10 in., there are 26 in. of slack to take up before the filling becomes tight. If the filling is coming off freely, as it should be, we should have more than 26 in. of slack to take up.

Now let us look at the other side. In this case the eye of the shuttle is toward the cloth, and hence all the slack filling that has to be taken up before the filling tightens is the distance between the end of the shuttle box and the edge of the cloth. If our reed is set in the center, as it usually is, there will be 10 in. of slack on one side and 26 in. of slack on the other side. This would lead to the conclusion that the stop motion ought to be out of center in the opposite direction. All looms that stop false always stop when the filling has the most slack to take up. Consequently if the filling stop motion were out of center in the opposite direction to that in which it now is, we would do much to eliminate the false stopping. Of course we might eliminate false stopping to a certain extent even now, but can we do this and still stop every single time the filling may break or run out? In other words, can we stop every time we have less than a complete pick in the shed, and never stop otherwise? It can be done with the filling stop motion in the center, but it could be done more easily with it out of center in the right direction.

Bobbins Emptied

With a good feeler, it is possible with good fixing of the filling stop motion and good cooperation between the spinning and weaving departments to have at least 50% of the discarded bobbins entirely empty, and the remaining 50% with not many inches of filling left on them. Compare this

(*Continued on page* 34)

Preparing Linoleum Cement and Manufacturing Linoleum Floor Coverings

Linoxin, Cork Meal, Wood Flour, Rosin, Kauri Gum, and Color Mixed to Form Linoleum

By Felix Fritz

THE invention of linoleum, a widely known floor covering material, is owed to Frederick Walton, of Sowerly Bridge, Halifax, Yorkshire, England, who one day noticed upon a can of paint

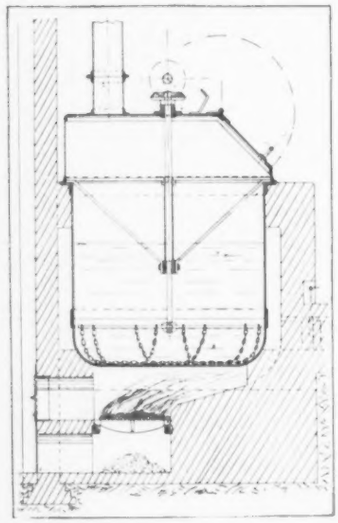


Fig. 1. Kettle for Boiling Linseed Oil Before Oxidizing

a dried skin, the elasticity of which impressed him when he rubbed it between his fingers. Contemplating at once the utilization of the suggestion thus received, he tried a number of experiments. He thought first of all of dissolving the skin in naphtha, and he eventually succeeded in doing this.

History of Linoleum

He secured a patent (British patent 209/1860), and commenced with the practical exploitation of his idea. As the sale of the solutions of dried-up linseed oil (linoxin) proved difficult, a new chance came to his aid. A merchant of Walbrook, occupying himself especially with the sale of kamptulicon (a floor covering consisting of india rubber, cork dust, and color) advised him to use his linoxin as a replacement of the india rubber, a main ingredient of kamptulicon, which was steadily increasing in price. This proposal greatly aroused the interest of Walton.

F. Pickersgill (British patent No. 7,178/1836) was the first who thought of calendering a mixture, such as was used in kamptulicon, upon a fabric of any kind. Following the hints and suggestions thus received, Walton tried some experiments which proved successful and provided the fundamentals for the present process of manufacturing linoleum. Walton was granted two patents relative to the matter in question (British patent 1,037/1863 and 3,210/1863), in the second of which is exhaustively described the details of manufacture. The erection of the first linoleum works, and the start of manufacture, took place in 1864. These works, now called The Linoleum Manufacturing Co., Ltd., at St. Aines, near London, exist today and have developed splendidly.

Oxidizing Linseed Oil

As the name linoleum suggests, linseed oil is the most important raw material used in the manufacture of the article. Linseed oil possesses the remarkable capacity of combining with the oxygen of the air, and consequently being transformed into a solid and elastic body called linoxin. Since, however, linseed oil dries much too slowly for commercial requirements when simply exposed to air, the process of drying is accelerated by an addition of siccatives.

The linseed oil is heated to 180 to 200° C. with 2% litharge in a boiler, such as that shown at Fig. 1, of 3,000 kilogram capacity, over an open fire for about six hours. After a thorough cooling, the boiled linseed oil is transferred to oxidizing rooms, where it is kept in a pit at the bottom of the room, *A*, at the right in Fig. 2. In the same room is an oil pump which transfers the boiled oil to the top of the adjoining oxidizing room (Figs. 2, 3 and 4). Here numerous thin sheets of cotton fabric are hung vertically over iron frames in lengths of six meters and at a distance of five centimeters from each other. Above these sheets is a truck (Figs. 3 and 5) into which the boiled oil is conducted, and from which the oil is allowed to run over the cotton sheets. In order to have all the cloths (called scrims) in the oxidizing room sprinkled, the carriage is moved about by chains which are pulled to and fro by a windlass fixed against the wall outside the oxidizing room.

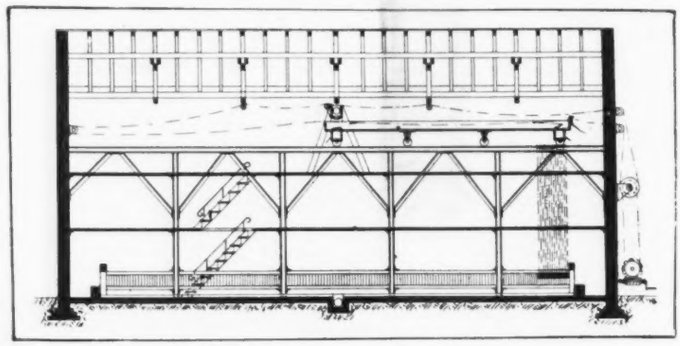


Fig. 3. Scrim Oxidizing Room for Linoxin Preparation (Longitudinal Section)

Fig. 4. Interior of Oxidizing Room, Showing Sheets of Cloth or Scrims

The boiled oil runs down the cloth sheets and covers them with a thin coating of oil, which dries up and turns into linoxin within 10 to 12 hrs., owing to the heat of 40° C. which prevails in the room. The surplus of oil gathers upon the floor and runs back to the starting point, i. e., to the reservoir. The sprinkling of the scrims is done twice a day—in the morning and in the evening. After about four months, the coating on the sheets has become from one to two centimeters thick, sufficient linoxin having been formed to be cut off from the frames. To prevent their sticking together, each of the sheets is powdered over with chalk.

Shower Method of Oxidizing

Another way of making oxidized oil is by the use of the apparatus shown at Figs. 6 and 7. The linseed oil to which has been added siccatives is warmed to 50 to 100° C. in a boiler

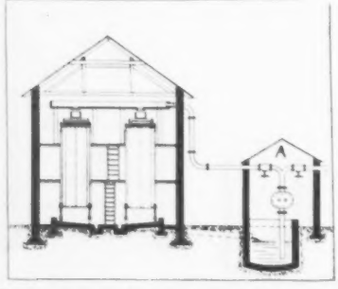


Fig. 2. Scrim System for Oxidizing Linseed Oil. (Cross Section of End of Plant)

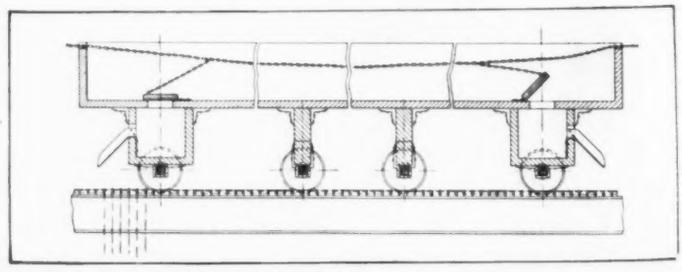


Fig. 5. Truck to Which Boiled Oil Is Pumped for Distribution Over Scrims

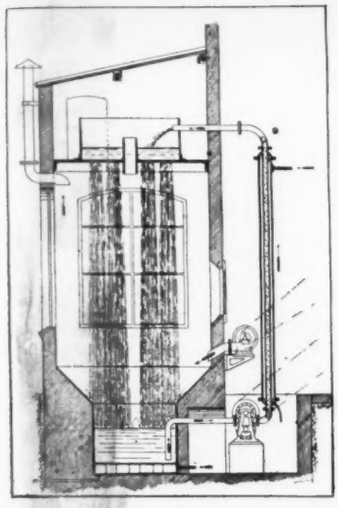


Fig. 6. Continuous System for Oxidizing Linseed Oil. Windows in This Tower Admit Light to Aid Oxidation

(Fig. 6), and is pumped up to the top of the tower-like building into a receptable with a sieve bottom. It flows in the form of a "shower," and is returned again and again to the starting point; i.e., to the boiler. Falling through the air, the oil absorbs oxygen, while the used air is renewed by a blower. The oxidation of the oil is accelerated by a strong exposure to light through windows placed in the walls of the tower. Exposure to artificial light has been used, especially to lamps which emit ultraviolet rays, with good results.

The thickening of the oil is pushed until a specific gravity of 0.975 to 0.980 has been reached, which takes from three to five days according to the temperatures, etc. Generally after this time it is quite impossible to proceed with the thickening because the oil does not flow through the sieve on the top. In consequence of this, 500 kilograms of the 3,000 kilograms of partially oxidized oil is poured into the charger of a horizontal, jacketed drum (Fig. 7) which can be heated and cooled. The drum is filled to just below the shaft of the stirring gear, 25 kilograms of whiting is added, the temperature is elevated to 55° C., taking care that the temperature does not rise above this point, and the stirring gear is started.

After a number of hours, when the oil has reached a sufficient consistency, the drum is inclined and the gate *F* is opened. The oil flows out into flat iron cases where it becomes stiff upon cooling. The cases containing the linoxin are now transported to steam-heated ovens where they are warmed to 40° C. for several days—until the linoxin does not cling to the finger or a piece of wood stuck into it. Through the influence of the prolonged heat, a honeycomb structure of the linoxin is produced, and any stickiness is removed.

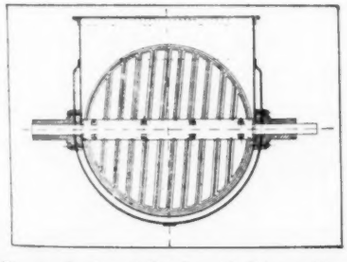


Fig. 8. Jacketed Kettle with Stirrer, Used in Mixing Linoleum Cement

Rapid Oxidizing

Sometimes linoleum works choose a much simpler process, which is carried out by filling the raw oil with driers and whiting directly without using the shower oxidizing arrangement. Working at 60 to 110° C., the linoxin is ready after a time of 15 to 30 hrs., and can be used immediately without any further treatment.

A treatment for thickening linseed oil at high temperatures (280° C.) is in common use. One thousand kilograms of raw linseed oil is pumped into a kettle which is filled not more than half full, and heated by an open fire. A vigorous current of air is forced continuously through the oil by means of an air-blast. When the temperature has reached 150° C., 20 kilograms of litharge is introduced very cautiously, little by little. The litharge dissolves, foaming up. After 12 to 20 hrs., the hot oil suddenly solidifies to a viscous jelly, called black oil, and must be quickly discharged into a large iron case, which must not be filled higher than 10 to 15 cm., where it cools.

Linoleum Cement

We come now to the manufacture of the linoleum cement. The scrim oil or the oil oxidized by means of drums, is thrown to a steam-jacketed kettle (Fig. 8) fitted with a horizontal stirring gear, which contains the necessary melted rosin. Steam of 7 to 10 atmospheres pressure is used. The scrim oil must be ground to a wooly mass or meal by steel rollers, while oil oxidized by the other processes is added in pieces. The stirrer is set in motion and powdered Kauri gum is scattered into the thickening mixture by shovelfuls.

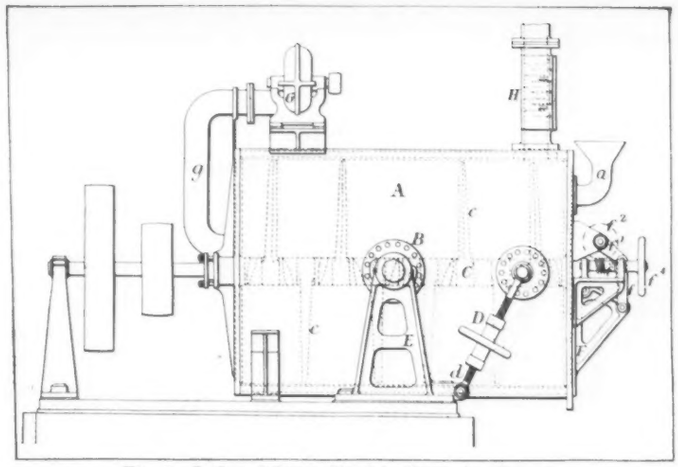


Fig. 7. Jacketed Drum Used in Preparing Linoxin

If scrim oil has been used, the mass coagulates after three-quarters to one and one-half hours, and must be discharged. On the contrary, if drum-oxidized oil has been used, the work will occupy several hours before the end point of the setting is reached. After coagulation, the linoleum cement is poured out of the kettle and ground between steel rollers. A doctor blade scrapes the linoleum cement from the rollers, to which it adheres. The hot

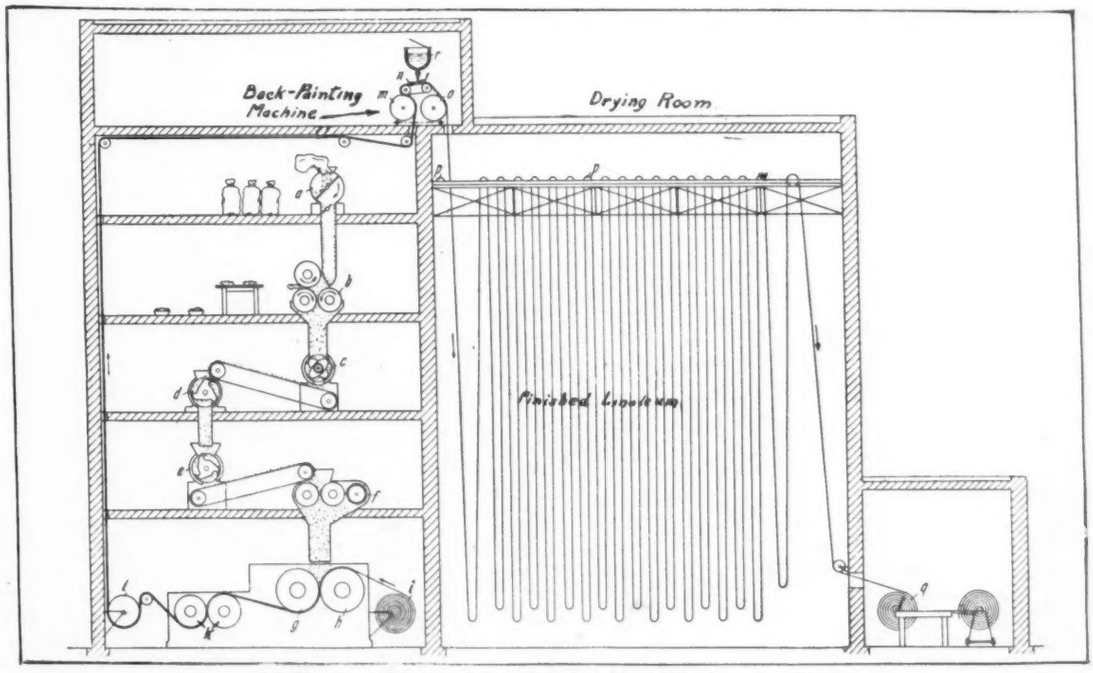


Fig. 9. Cross Section of Complete Linoleum Manufacturing Plant

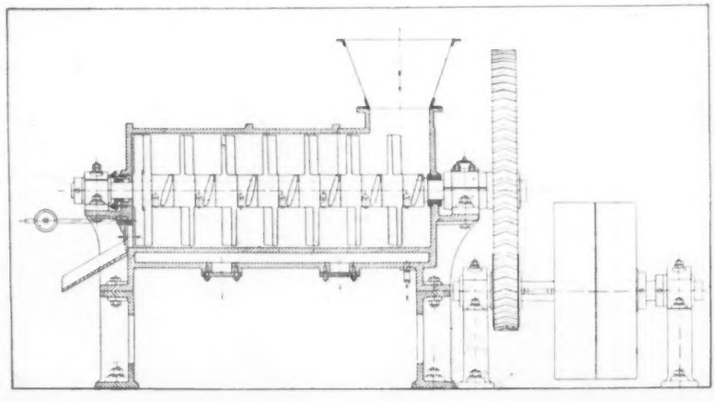


Fig. 10. Machine in Which Linoleum Mixture Is Agitated

cement is placed in iron trays containing 20 kilograms, and is cooled in the form of flat cakes.

After six weeks' time—i. e., after maturing—it is fit for use in linoleum manufacture. A composition of 800 kilograms of linoxin, 150 kilograms of rosin, and 50 kilograms of kauri gum has proved excellent as linoleum cement.

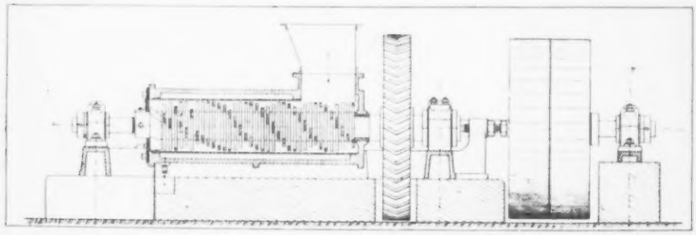


Fig. 11. The "Sausage-Maker" for Grinding Linoleum Mixture

Now follows the mixing of the linoleum mass in the mixing house (Fig. 9). Raw materials used here are cork meal, wood meal, colors, and linoleum cement. The bark of the cork oak must be ground to the fineness of meal between flat millstones. At the top of the mixing house is a drum *a* with stirrer, into which the cork meal, the wood flour, and the colors are poured. This mixture falls through a funnel to the cylinders of a steel roller *b*, where the linoleum cement is added. The rolled mass goes now into the mixing machine *c*, the construction of which is shown at Fig. 10.

"Sausage Maker"

The linoleum mixture upon leaving this machine falls upon a conveyor belt and is taken to a machine called the "sausage maker." This machine works like a meat grinder, but is built on a much larger scale. The linoleum mass passes through *d*, and immediately afterward through a second and similar machine *e*. The construction of the "sausage maker" can clearly be seen at Figs. 11 and 12. Having passed through *e*, the mixture is transported to the scratch rollers *f*, where it is transformed into a fine granular powder. It is next taken to the hopper of the calendering machine, where it is pressed on the burlap backing.

The calendering machine (Figs. 9 and 13) is composed of a huge pair of rollers *g* and *h* having a diameter of one meter and a length of 2¼ or even 3¾ meters, and a second pair of rollers *k* with a diameter 30% less than *g* and *h*. The calenders are constructed generally for a width of two meters.

The jute burlap, which is unrolled from a roll *i*, passes between the rollers *g* and *h* of the calender, where the linoleum mixture is applied. Roller *g* is heated to 120° C. and the mixture is vulcanized on to the burlap back.

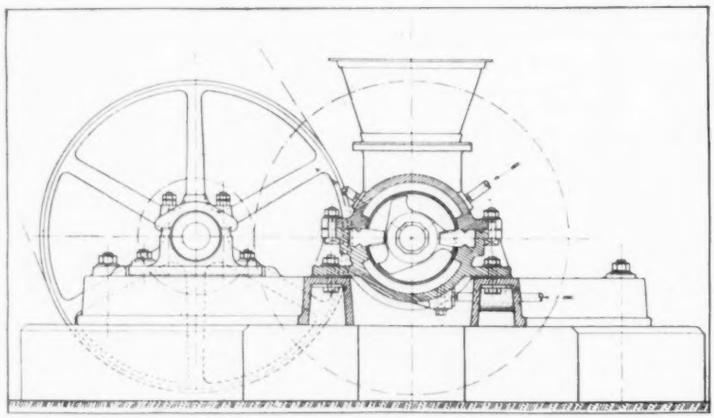


Fig. 12. End View (Cross Section) of the "Sausage-Maker"

Through rollers *k* a polishing of the surface of the linoleum is given. A water-cooled, copper drum *l* cools the linoleum and makes it much more resistant to the handling which follows.

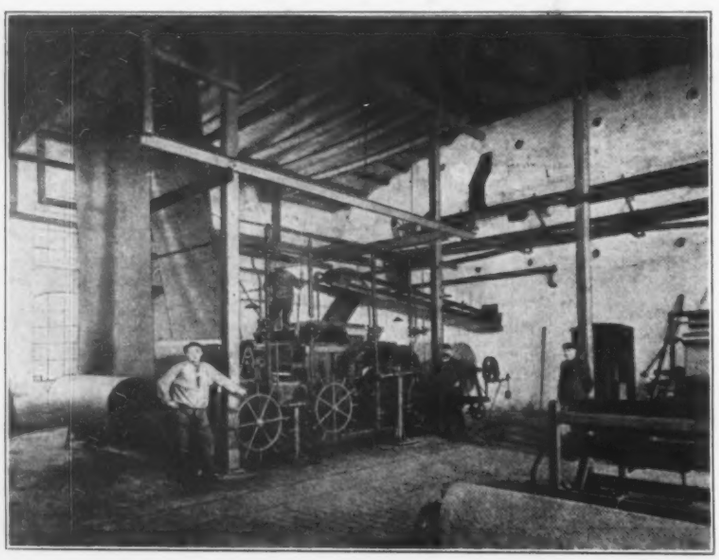


Fig. 13. Linoleum Calender

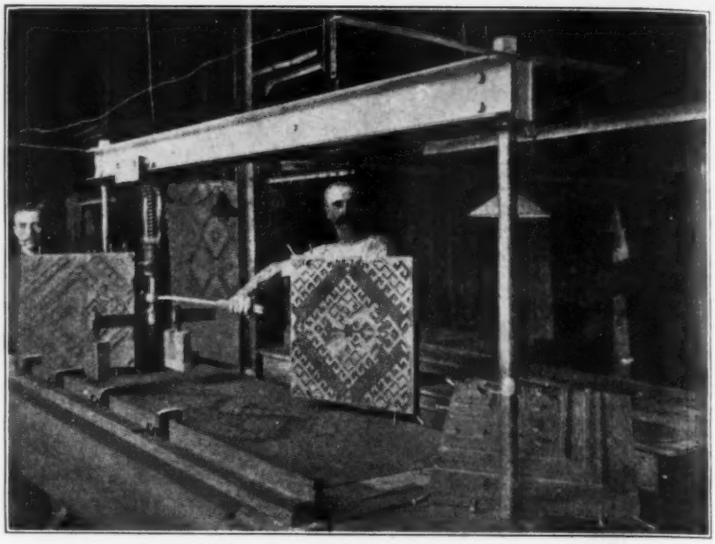


Fig. 14. Block-Printing Linoleum

The linoleum is then led to the top of the room, passing through a troweling machine, and is hung up in the drying room.

Typical Formulas

The composition of the linoleum mass varies according to the kind of linoleum. It differs for plain, for molded, and for granite linoleum. The following proportions of ingredients have been demonstrated to be satisfactory:

	Plain				
	No. 1	No. 2	Inlaid	Granite	Corticine
Cork meal (kg.).	25	13	.....	.....	25
Wood flour (kg.)	....	12	25	25	.....
Linoleum cement (kg.)...	20	20	23-25	20	Black oil (kg.) 15
Color (kg.)	10	10	8-15	8-12	3 5

The troweling or backing machine consists of a steam-heated trough *r* which is filled with red oxide of lead paint. By means of cocks the paint flows out on the back of the linoleum passing through the machine. A doctor blade of steel removes the surplus of paint. The paint may be mixed from the following ingredients: 450 kg. boiled linseed oil, 50 kg. rosin, 9 kg. resinas of manganese, 100 kg. red oxide, and 1,000 kg. whiting.

The linoleum, after painting, is hung in loops in the drying house at a temperature of about 45° C., remaining here for from two to four weeks, in order to obtain the necessary coherency and to dry the backing coating. After seasoning, the linoleum is taken out of this drying room and is ready for use.

Not only plain linoleum is manufactured, but also, by means of suitable mechanism, granite, inlaid, and printed linoleums are produced. Some of these products are known as veined linoleum, parquet linoleum, and cork linoleum. Fig. 14 shows the method of printing by hand with blocks.

New Power Line from Canton, N. C., to Greenville, S. C.

CANTON, N. C.—Construction work on power transmission line from Canton, N. C., to Greenville, S. C., will be started in the early part of the spring and will be completed within a year, it was stated by Marvin Kirkpatrick, of Greenville, paymaster for the Duke Power Co., formerly the Southern Power Co.

The transmission line is to connect Greenville with the recently completed hydro-electric power plant on the Pigeon river, northwest of here. A line from Pigeon river to Canton is now under construction.

Adjusting Stop Motion

(*Continued from page 31*)

style of weaving with the changing of the filling by hand, taking two or more shuttles out at one time and making many yards of good yarn into waste. By hand, 10% waste in weaving is many times made. The saving of yarn on the magazine loom will equal often more than 60% over the old system.

Many good loom fixers seem to be afraid to try to fix these automatic looms. They are really simple, however. I advise any fixer starting in on these automatic looms to send to the loom builders for the booklets which they now print to help loom fixers. I realize that some fixers do not like the book idea, but these books give something to work from. The fixer then has a starting place, and the rest comes easy.

A Wide Range of Fast Shades May Be Produced on Cotton Piece Goods with Naphthol Colors*

Combinations of Naphthols and Color Bases—Preparing Naphthol Solutions—Stability of Solutions

By Winn W. Chase

IN the accompanying article the author has brought together the essential information regarding the application of the naphthol colors to cotton piece goods. The general character of this class of colors, the range of shades possible with them, and the preparation of naphthol solutions are discussed in this installment. In the concluding article, which will appear in an early issue, the fast color bases and salts, diazotization and development, and fastness properties of dyeings will be considered.

IN the fifteen years since the introduction of Naphthol AS by the Griesheim Co., a considerable number of dyestuffs of this type have been developed and the application of naphthol colors has assumed a position of importance in the textile industry. These dyes have proved useful for producing economically shades which are fast to light, washing, and bleaching. While the range is still somewhat limited, it is possible to obtain with the naphthols various tones of red, scarlet, garnet, orange, yellow, brown, navy, and black.

Several articles have appeared on the subject of naphthol colors; some deal with their historical development, others with the scientific side of the subject, and a few with their practical application. The purpose of the present article is to bring together in convenient form the most essential information in regard to the application of these dyes to cotton piece goods. In compiling this material the author has drawn freely from the works of Hager, Marsson, Rath, Rose, and others, as well as from the instructions issued by the Griesheim Co. For the purposes of convenience and clarity, the information, so far as possible, has been arranged in tabular form; and for the same reasons all quantities have been computed to the American scale of weights and measures.

General Methods of Dyeing

The dyeing process for naphthol colors consists of two operations:

(1) The impregnation of the fabric with a solution of a naphthol which has been dissolved in water with the addition of caustic soda and Turkey-red oil.

(2) The development of the color by means of a solution of a diazotized fast color base, or with one of the more recently introduced fast color salts.

Four types of machines are suitable for the application of naphthol colors to cotton piece goods, namely, padders, jigs, roller vats, and continuous machines.

At the present time the following naphthols are on the market.

Naphthol AS
Naphthol AS-BO
Naphthol AS-RL
Naphthol AS-BG
Naphthol AS-G
Naphthol AS-SW
Naphthol AS-BS
Naphthol AS-BR
Naphthol AS-D
Naphthol AS-TR

In the following list of fast color bases, those marked with an asterisk are also available as the corresponding fast color salt:

*Fast Orange GR Base
*Fast Yellow GC Base
*Fast Orange GC Base
*Fast Orange R Base
*Fast Scarlet GG Base
Fast Scarlet G Base
*Fast Scarlet RC Base
*Fast Scarlet TR Base
*Fast Red GG Base
Fast Red KB Base
*Fast Red 3GL Base Special
*Fast Red GL Base
Fast Red RL Base
*Fast Red B Base
*Fast Red TR Base
Fast Garnet GC Base
Fast Garnet GBC Base
*Fast Black LB Base
*Fast Bordeaux GP Base

Color Combinations

By coupling the various naphthols and bases it is possible to produce a considerable range of bright shades on cotton fabrics. The most important color combinations are given in the following list.

Naphthol AS, the first of this group of colors to be developed, gives with the different bases shades including brilliant oranges, and scarlets, red, bordeaux, and blue.

Naphthol AS-BS, discovered soon after the AS, yields shades somewhat inferior to light, but brighter and more bluish in tone; this naphthol base serves almost exclusively as a shading material and is little used for producing self shades.

Nathphol AS-BO, the third of the series, gives fast-to-light bordeaux and wine shades; the combination with Fast Red GL base is much used.

Naphthol AS-RL, the next to be introduced, gives with many of the bases extremely fast-to-light dyeings; the most important combination is with Fast Red RL which produces a brilliant fast-to-light pink.

Naphthol AS-G with Fast Scarlet GG yields yellow shades fast to kier boiling under pressure; and with Fast Bordeaux GP gives a golden orange.

Naphthol AS-SW, although originally intended for the production of a fast-to-bleaching black with Fast Black LB, can also be employed for the production of a brilliant flaming red by coupling with Fast Red KB.

Naphthol AS-BG is a special product giving a fast-to-light, yellowish-brown shade with Fast Scarlet GG.

Naphthol AS-BR yields a red shade of brown with Fast Scarlet GG.

Naphthol AS-TR with Fast Red TR produces a true Alizarine Red shade which will stand a caustic boil.

Naphthol AS-D is used in the printing industry.

Other shades may be obtained by mixing two or more of the fast color bases or salts in various proportions, and in some instances the naphthols may be mixed. In the latter case it is necessary to select naphthols having the same substantivity, otherwise the bath will exhaust unevenly, and level dyeings will be impossible.

Substantivity of the Naphthols

It has been found that when the naphthols are dissolved in water with the additon of caustic soda and Turkey-red oil, colloidal solutions are formed. It has also been proved that different naphthols have different degrees of dispersion. This factor has an important practical bearing on the application of the naphthols influencing the method of dyeing, the stability of the solutions, and the fastness to crocking of the finished dyeings.

Those naphthols having the highest degree of dispersion are known to possess the least substantivity, while the naphthols having lower degrees of dispersion are of greater substantivity. For working purposes the naphthols may be grouped as follows:

A. Inferior substantivity
- Naphthol AS-G
- Naphthol AS
- Naphthol AS-BS
- Naphthol AS-RL

B. Medium substantivity
- Naphthol AS-BG
- Naphthol AS-BO.

C. High substantivity
- Naphthol AS-TR
- Naphthol AS-SW
- Naphthol AS-BR

The degree of exhaustion of naphthols from the impregnating bath ranges from 20% for members of Group *A* to 80% for members of Group *C*. On mercerized cotton the substantivity of the naphthols is higher; thus, in dyeing mercerized fabrics, more dilute solutions of naphthols may therefore be employed than when unmercerized cloth is being dyed.

Modifications in the method of applying the naphthols likewise influence the substantivity of these dyestuffs. The most important considerations from the dyer's standpoint are temperature of the impregnating bath, additions of electrolytes to the naphthol solution, and additions of protective colloids to the liquor.

Temperature for Dyeing

Investigators have found that the higher the temperature of the naph-

TABLE I

Make into a paste			Dissolve paste in	Reduce to required volume in cold water	Add for each 100 gals. of solution	Add	Notes
Naphthol	Turkey-red oil 50%	Caustic soda 52° Tw.	Hot water, boil if necessary	Cool to	Turkey-red oil to total	Formaldehyde (30%)	
AS 1 lb.	½ pt.	7 gills	9 qts.	86° F.	1½ qts.	1 pt.	
AS-BS 1 lb.	½ pt.	7 gills	9 qts.	86° F.	1½ qts.	1 pt.	
AS-BO 1 lb.	½ pt.	14 gills	9 qts.	86° F.	1½ qts.	1 pt.	
AS-RL 1 lb.	½ pt.	14 gills	9 qts.	86° F.	1½ qts.	1 pt.	
AS-SW 1 lb.	1 pt.	14 gills	23 qts.	86–120° F.	1½ qts.	1 pt.	Soft water necessary. Paste should be warmed and allowed to stand several hours. Boil ½ hr. to dissolve.
AS-BR 1 lb.	½ pt.	14 gills	12 qts.	86–120° F.	1½ qts.	1 pt.	
AS-BG 1 lb.	½ pt.	14 gills	12 qts.	86–95° F.	1½ qts.	1 pt.	
AS-TR 1 lb.	1 pt.	7 gills	14 qts.	75–85° F.	1½ qts.	1 pt.	
AS-G 1 lb.	½ pt.	14 gills	8 qts.	86° F.	1½ qts.	.....	When bath contains more than 3 lbs. naphthol to 100 gals., use only 7 gills caustic for each pound of naphthol.

*All rights reserved by author.

thol solution, the greater the degree of dispersion and the lesser the degree of substantivity; therefore, when impregnation is carried out at high temperatures, lighter shades are obtained than when the dyeing is conducted at lower temperatures. This difference is particularly noticeable in the case of the naphthols of Group C. On the other hand, too low temperatures must be avoided, otherwise the degree of dispersion will be lessened to the extent that the naphthol will not penetrate the fiber. This results not only in weak shades, but also in surface dyeing which gives rise to crocking.

The addition to the naphthol solutions of electrolytes such as common salt or glaubersalt also decreases the degree of dispersion and increases substantivity, with the result that exhaustion of the bath is more complete. Here again, caution must be used, as the addition of too much electrolyte has the same effect on the dyeing as does too low temperature of the bath. In the impregnation with the naphthols of Group C, the use of electrolytes is not recommended, as the addition of these agents is liable to cause precipitation of the naphthol.

The presence, in the naphthol solution, of protective colloids such as Turkey-red oil, gelatine, and glue also influence the degree of dispersion. The functions of these agents will be considered in more detail in a subsequent paragraph.

The substantivity of the naphthols has a relation to the fastness-to-crocking of the dyeings. In general, the higher the substantivity, the better the fastness to crocking. The fastness-to-crocking of dyeings with naphthols of low substantivity may be increased, however, by drying the fabric after impregnating with the naphthol solution, and also by a thorough soaping after development with the fast color base or salt.

Stability of Naphthol Solutions

Naphthol solutions are sensitive to the carbon dioxide of the air, and gradually decompose, the sodium salt being converted into free naphthol. The first sign of decomposition is a slight turbidity of the bath, and in time precipitation takes place. Dyeings made from partially decomposed solutions are difficult to develop, and streaky or spotty dyeings often result. Naphthols having high degrees of dispersion decompose less rapidly than those having low degrees of dispersion. In dissolving naphthols, the amount of caustic soda used should be somewhat greater than is theoretically necessary to form the sodium naphtholate. This excess of alkali aids in preserving the stability of the solution by combining with the carbon dioxide of the air. Too great an excess of caustic must be avoided, however, as this will retard the coupling action and promote decomposition of the developing bath.

Protective colloids such as Turkey-red oil, gelatine, and glue increase the degree of dispersion and consequently lessen the rate of decomposition of the bath. (The Griesheim Co. recommends that all Turkey-red oil used in conjunction with naphthols should be free from ammonia.)

The chemical reaction of formaldehyde with naphthol solutions is not fully understood, but it is known that this agent inhibits decomposition of the bath. In the case of Naphthol AS-G, however, formaldehyde must not be used, otherwise the coloring strength is weakened or destroyed. Formaldehyde should not be added to any naphthol solution at a temperature above 140° F.

Rath has shown that the action of Turkey-red oil is strengthened by the addition of small amounts of gelatine or glue to the bath. For example, a solution containing six pounds of naphthol AS-BO to 100 gals. prepared with Turkey-red oil, caustic soda, and formaldehyde will remain stable for three days, while the addition of two pounds of gelatine causes the solution to remain unchanged for two weeks.

To insure stability after the material has been impregnated with naphthol solution, the fabric should be protected from direct sunlight, water drops, chlorine and acid fumes, and development should take place as soon as possible.

Preparation of Solutions

Naphthol solutions are prepared for use in the following manner:

(1) Mix together into a paste the required amounts of naphthol, Turkey-red oil, and caustic soda.

(2) Dissolve the paste in hot water, boiling if necessary.

(3) Dilute the concentrated solution to the required volume for dyeing, with cold water containing a sufficient quantity of Turkey-red oil to total at least three pints for each 100 gals. of solution.

(4) Bring solution to proper temperature for impregnation.

(5) Add one pint of formaldehyde to each 100 gals. of solution.

(Omit formaldehyde in baths containing Naphthol AS-G.)

Table I shows in detail the amounts of water and chemicals necessary to effect the proper solution of the various naphthols and the correct temperatures for impregnation. Soft water is recommended for use with naphthols, and in the case of Naphthol AS-SW is very essential.

(To be concluded)

Mercerizing in the Gray

Results Satisfactory When Desizing Is Properly Done

By Thomas F. Hughes

THE keen competition brought about by the enormous industrial development of today has transformed, little by little, the working conditions of the bleacher, dyer, and finisher. One of the processes that the bleacher has developed is the proper desizing of piece goods that are to be mercerized in the gray. The writer has found from experience that satisfactory luster can be obtained on lightweight goods, such as voiles, lawns, organdies, etc., by mercerizing in the gray, if the goods are properly desized.

Desize on Singer

One of the most inexpensive ways of doing this work is on a singer, putting the desizing agent in the water box and running the goods into bins or boxes. If the goods are not to be singed, they may be run in the open form through a wash box containing rolls with rubber squeeze rolls at the delivery end; such goods may be run on the singer with the flame out. Goods coming from the singer can be put in boxes, and, after letting them stand one to two hours under the action of the enzyme, they may again be washed in the open width and mercerized wet. This will save the expense of putting the goods into rope form and opening again.

The desizing should be looked after carefully for good results, and care must be taken to have the desizing solution at the right temperature, which should be from 130 to 135° F. The thermal death-point of most enzymes is around 140° F. Goods may be run in the same bath for a day with the addition of more desizing solution; but, as the bath becomes contaminated with impurities, it is advisable to start with a fresh bath every morning.

Most compounds used in the sizing of warps contain gums and starches, and, in addition, a fatty substance added to render the warp more pliable. The enzyme preparations used in removing starch convert the starch into a soluble sugar that is readily washed out along with the other impurities. Starch is indicated in the goods by a purple coloration when spotted with iodine solution.

In mercerizing in the gray, there are many things to be noted. The cloth should enter the pad over brass pipe rods with a tension bar set in a convenient place; a cloth expander should also be set in the pad box just before the cloth enters the nip. There should be an iron ball weighing five pounds suspended from above and resting on the cloth some 10 ft. down the frame from where the cloth enters the clips. The idea of this is to tighten the cloth so that the clips will take hold at once without letting the cloth go six or seven feet down the frame before being correctly caught. By this means the cloth is prevented from being "kicked out" by the clips, and clip marks are eliminated. Although this little device costs practically nothing, it has worked out very well in plants where it has been installed.

Washing Important

The washing of the goods on the frame is very important, and the goods on the frame should be stretched as near to the gray width as possible without damage. The tighter the fabric is stretched, the more luster is obtained. When the goods are under tension they must be thoroughly washed to bring the mercerizing strength below 22° Tw. After the goods are mercerized, they may be reeled directly to a kier and given one boil of 10 hrs. There will be enough caustic left in the goods so that with the additon of soap, oil, and soda ash one boil will give a perfect, absorbent white.

A very good way to reclaim the caustic from wash water is to build a cement catch basin about three feet high under the frame, connect it with a pump, and pump the same caustic water over the goods again and again until the strength is increased (to a maximum of 22° Tw.), when the liquor may be pumped to the kier tank to be used in kier boiling, or, by building up, it can be used for mercerizing. It is well to have a pump on the caustic padding box so that if the caustic should get below 54° Tw., or if the pad should break down, the liquor can be pumped back to the tank.

No mercerizing frame should be run the same width the entire length. The delivering end should be one inch narrower to prevent clip marks. Goods that have been opened for mercerizing may be treated in a very simple way, if it is not desired to put them back into rope form in dyeing. On the end of the mercerizer are placed boxes containing guide rolls over which the goods travel up and down through the baths, and rubber squeeze rolls. Each box is provided with spray water pipes and with an overflow to take off the wash water. The first box contains hot water, and it is into this that the goods run after coming from the mercerizing range. The fabric is cooled by a water spray before entering the nip to the acid box, which is the second box in the series. Here the goods are soured cold with sulphuric acid of 1½° Tw. strength. In the next box the goods are washed with cold water. The last cold water box has a compartment for soda ash solution to completely neutralize any acid left in the goods. The goods then go directly to the cans to be dried, and then to the pads or jigs.

This continuous, open-width process has been found to save a lot of time and labor, and goods treated this way are kept free from resists and stains. Goods that are to go as white may be taken to the bleach house for a light bleach, and may then be finished in the regular way.

Jersild Knitting Co.'s Salesmen Hold Annual Meeting

NEENAH, WIS.—Salesmen of the Jersild Knitting Co. attended the annual meeting here Jan. 10 and 11, at the Valley Inn.

About 30 of the salesmen were present at a luncheon on Jan. 10, and in the evening, a living model display in knit goods was presented.

NEW MACHINERY & PROCESSES

Textolite Loom Picker

General Electric Co. Employs Material Used in Textolite Gears

THE General Electric Co. has recently added to its long list of activities the manufacture of loom pickers, using for this purpose "Textolite," the material of which it makes one type of its silent, non-metallic gears. The picker will soon be made in forms suitable for all types of looms, including the English over-pick looms. The advantages claimed are long life, accurate shape, permanent alignment and form, elimination of picker trouble with benefit to production, and improved weaving. The E. H. Jacobs Mfg. Co., Danielson, Conn., and Charlotte, N. C., are the

Textolite Picker for Drop-Box Woolen and Worsted Looms

exclusive selling agents, but it is stated that all the leading mill supply houses will act as selling representatives for that company.

The basis of Textolite is in itself a product of the textile mill. This is high-quality, 15-oz. army duck. The fabric is coated, but not impregnated, with a synthetic resin as a binder, and is then subjected in molds to a high temperature and a heavy pressure, whereby is developed a solid, homogeneous material of the form desired. For the gears, the fabric lies in layers, but for the pickers the strips of cloth, which are narrower, are made to entwine about themselves and interlock, thus avoiding any possibility of the picker splitting. The resin or binder has been described as acting in the capacity of numerous tiny rivets passing through the interstices of the cloth and holding the fabric under compression.

Strength of Textolite

Tests conducted by the General Electric Co. have shown that the strength of Textolite depends more upon the quality of the cotton fabric than upon the strength of the resin. The compressive strength of this material is well over 35,000 lbs. per square inch, and is uniform in all directions at all times. It has a specific gravity of 1.35 and a weight of about .05 lb. per cubic inch.

Textolite pickers installed in mills for test purposes under operating conditions are still in use after a period of nine months. This gives a very promising indication of unusual lasting properties.

One of the most important characteristics of the new picker is evidenced even before it is placed in service, viz., its tendency to retain its shape in storage under all conditions of temperature and humidity. It is unnecessary to plug the spindle-hole of a box-loom picker with wood, to season the picker, to immerse it in oil, or to protect it from the atmosphere or the attacks of vermin. It is claimed that there is never any necessity for reaming out the spindle-hole before applying the picker to the loom, and when on the loom there is no danger of the picker losing its shape during week-ends and periodic shutdowns. The hole will remain round and will not bind on the spindle by swelling or contracting. In use the interior of the hole develops a highly polished surface which reduces friction and avoids wear on the spindle.

Accuracy Assured

Accuracy is assured by the fact that all pickers are made in individual molds and hence cannot differ in dimensions; therefore, the striking point on box-loom pickers will always be the same distance from the spindle. The uniform density of the Textolite will prevent the spindle-hole enlarging or becoming egg-shaped, thus preventing the striking point moving out of alignment with the shuttle, and will resist the prying or splitting action of the shuttle. The smooth and rounded surface, with the absence of rivets, prevents any accumulation of lint and offers no projection to catch threads. The action of the shuttle is benefited by the natural cushion effect of the Textolite, and the pick hole formed by the shuttle deepens slowly and develops a gloss.

As it is said to be never necessary to remove the picker and straighten it in a vise or to file it, and as it does not require frequent replacement, its use is an aid to production. Its permanent alignment insures against faulty weaving due to improper striking of the shuttle, and insures against throwing out of the shuttle from that cause. It is claimed that the hole for the stick is not subject to appreciable wear. The spindle-hole is closed on the stick-hole side, giving increased bearing on the spindle and eliminating one point where oil or waste may collect.

The Textolite picker is believed to be the first important innovation in this type of equipment for over 50 years.

The British Thomson-Houston Co. of England and the Compagnie Francaise Thomson-Houston Co. of France, associated with the General Electric Co. in world-wide trade, have also appointed the E. H. Jacobs Mfg. Co. as exclusive distributors of the Textolite products in the textile industry for a period of 16 years, or the life of their patents. These pickers and other Textolite products for

Textolite Picker for Drop-Box Cotton and Silk Looms

the textile industry will be manufactured in England and France; and W. Irving Bullard, treasurer of the E. H. Jacobs Mfg. Co., is now abroad organizing selling companies in foreign markets.

Best Drafts and Settings

Determined by New Apparatus Before Adjusting Frames

From *Cataluna Textil**

A European builder of cotton machinery has placed an apparatus on the market for the study of drafting and of determining the distances of the drawing rolls. It is claimed that with this device much loss in time and production can be avoided, principally in those cases where there is a large variation in the grade of cotton. If regularly used, the apparatus serves also to control the quality of the cot-

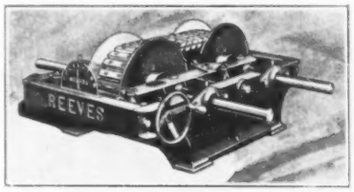
(*Continued on page* 45)

* Translated and digested by Herbert R. Mauersberger, who is associated with James W. Cox, Jr., Consulting Textile Engineer, 320 Broadway, N. Y.

Variable Transmission

Made Stronger, More Compact, and More Efficient

The Reeves Pulley Co., Columbus, Ind., announces several major improvements in its variable speed transmission. These improvements make the transmission stronger and more compact. It is claimed that this machine will now deliver power

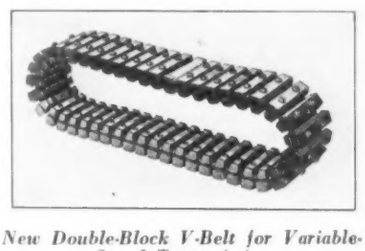


New Design of Variable-Speed Transmission

even more efficiently than it has before.

First among these improvements is a new double-block, center-pull V-belt. This V-belt gives over twice the surface contact against the driving discs of the transmission, and this feature is said to insure maximum strength, quietness, and operating ease, with a more efficient transmission of power. The end tips of the belt blocks are shaped by a special process to conform exactly to the curved surface of the driving discs. Another reason for the new belt's high efficiency is that it can be run at slack tension, which lengthens the life of the belt and reduces the load on the driving parts of the transmission.

The new Reeves transmission has a different type of splice-block, which is simpler and stronger. This splice-block is of the double-pin interlocking



New Double-Block V-Belt for Variable-Speed Transmission

type with cast aluminum blocks and tool steel plates. It is said that this new construction forms a splice that is permanently unbreakable.

The transmission has been reduced in size. It is shorter and narrower—more compact. The reduction in width has been accomplished by setting the frame bearing housings in recessed grooves in the frame sides. This brings the bearing housings closer together and eliminates most of the width outside of the actual frame dimensions. Besides saving in space, this construction makes the drive shafts stronger and more rigid. The over-all length of the transmission has been materially reduced by elim-

REPAIR SERVICE

The Repairing of a machine is as important as the selection of the machine itself.

The R. H. Hood Company has for years conducted fully equipped machine and forge shops for the repairing or refluting of plain or fluted rolls and for all general repair work on worsted machinery.

We extend our service to repairs of gill box screws, cams and flyers, as well as Comb Circles and Fallers, and carry a complete stock of worsted machinery gears on hand at all times.

The fact that the R. H. Hood repair shops are the largest and best equipped of their kind in the country bears out our slogan

"If it's Hood It's Good"

See also CONSOLIDATED TEXTILE CATALOG

ESTABLISHED 1885
R.H. HOOD CO.
INCORPORATED 1906

19th and Westmoreland Streets
PHILADELPHIA, PA.

New Machinery and Processes—Continued

inating all the excess clearance between the ends of the discs and the frame. Also, the feet of the new frame are planed to accurate dimensions so the transmission will mount perfectly level at all times.

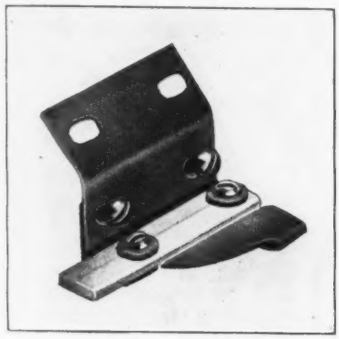
Reeves engineers have designed a new method of disc lubrication of high efficiency. The bore of the disc hub is now grooved spirally, providing more uniform and thorough lubrication to all parts of the disc hub, bore, shaft, and driving keys.

Standard equipment on the new transmission includes a handy speed indicator.

Silk Cleaner

Suitable for Canton and the More Flimsy Grades

The accompanying illustration shows the S. & S. porcelain-blade cleaner manufactured by the Page-Madden Co., Inc., 277 Ralph Ave., Brooklyn, N. Y. This combination of porcelain blade and steel guide is said to be efficient on Canton and the more flimsy grades of silk. It is self-threading, the thread entering the cleaning slot with the motion of the traverse bar. Lightness of construction permits its being placed on the traverse bar directly under the standard porcelain guide without its weighing down the bar. It is adjustable, and can be set accurately with a "feeler gauge."



Silk Cleaner with Porcelain Blade and Steel Guide

RECENT TEXTILE PATENTS

COTTON chopper. 1,655,509. J. W. Patton, Meridian, Miss.

COMPOSITE roll. 1,655,886. G. Baehr, Irwin, Pa.

DYED fabric article and dyeing same. 1,655,973. R. R. Ross, Milwaukee, Wis.

LOOMS, Thread clamping mechanism for. 1,655,882. A. C. Varnum and J. E. Birdsall, Southbridge, Mass.

TEXTILE machinery or the like, Automatically controlled driving mechanism for. 1,655,739. J. Robson, Waterbury, Conn. Assigned to The Waterbury Tool Co., Waterbury, Conn.

TEXTILES, Method and chemical mixture for producing brocaded. 1,655,414. H. Flory, Hawthorn, N. J.

WINDING machine. 1,656,088. E. R. Swanson, Cranston, R. I. Assigned to the Universal Winding Co., Boston, Mass.

WRAPPER for textile piece goods. 1,655,460. F. Galbraith, Queens, and W. Valet, New York, N. Y.

Banner Jacquard Knitting Machine

New Principle for Making Unlimited Range of Patterns

A DEVELOPMENT of outstanding importance in the hosiery field is the new "Banner" jacquard knitting machine for making fancy hosiery, which has just been announced by the Hemphill Co., Pawtucket, R. I. New methods are employed which make possible an unlimited range of patterns and practically eliminate the loss of time in changing from one design to another.

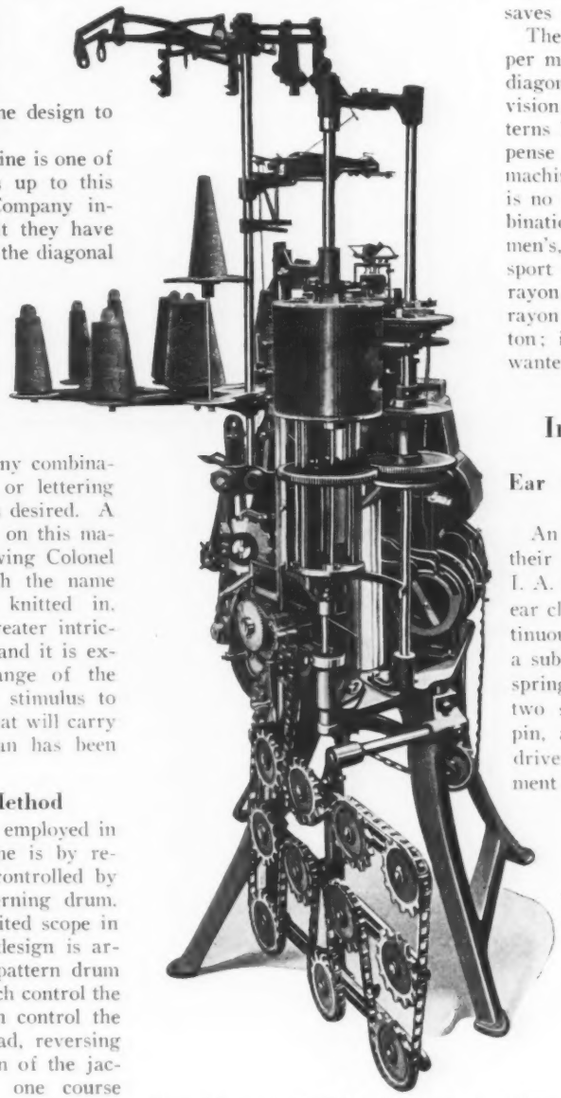
The new jacquard machine is one of the greatest achievements up to this time of the Hemphill Company inventors. In developing it they have gone beyond the scope of the diagonal patterning mechanism machines and produced a machine which will make any form of pattern, including any stripe whatever, whether horizontal, vertical, or diagonal; any form of figure, any lettering, or any combination of stripes, figuring, or lettering in any color combinations desired. A novelty recently produced on this machine is a half hose showing Colonel Lindbergh's airplane with the name "Spirit of St. Louis" knitted in. Other designs of even greater intricacy have been produced, and it is expected that the wide range of the method used will give a stimulus to the fancy hosiery trade that will carry it to greater success than has been known heretofore.

Reverse Plating Method

The patterning method employed in the new jacquard machine is by reverse plating, which is controlled by pattern jacks in a patterning drum. This method gives unlimited scope in design and color. The design is arranged on the jacquard pattern drum by jacks, the butts of which control the dial jacks, which in turn control the sinkers in the sinker head, reversing the yarn. One revolution of the jacquard pattern drum is one course knitted on the cylinder, so that the butts which remain on the jacquard drum outline the design just as it shows on design paper or on the goods. This method differs from other fancy machines and allows an unlimited range of patterns. It also simplifies the operation of fancy knitting.

It is necessary to stop the machine for only 10 to 15 min. to change patterns, which reduces loss of production, and in changing there is no interference with the adjustment of knitting points in the machine. Patterns can be laid out in advance, which is a further aid to production, and also patterns can be saved and easily put into operation for repeat orders.

A mechanism for raising and lowering the jacquard pattern drum is provided for giving repeat patterns, which simplifies the making up of the design. Another advantage of this mechanism for raising and lowering the pattern drum is that more than one pattern can be put on one drum, where the entire depth is not required for a single pattern. This naturally facilitates the changing of patterns in the machine without taking time to change the jacks or patterning drum. A pattern chain governs the up-and-down movement of the drum, controlling the number of courses in a given pattern.



New Jacquard Knitting Machinery for Fancy Hosiery

High-Speed Operation

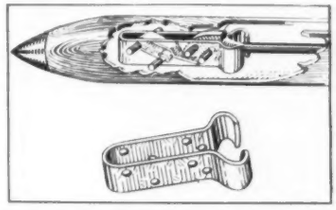
Some of the special features of this new machine to which particular attention is called are the following: The pattern is arranged on a jacquard drum which is independent of the rest of the machine. The jack butts on the drum surface operate the sinker jacks, which in turn control the sinkers in the knitting head and cause the reverse plating. There is no interference with the knitting points in the machine in changing patterns. It is not necessary to change the dial jacks or the sinkers in the cylinder to make various patterns. It is only necessary to change butts on the jacks in the jacquard drum to change the pattern, which makes for the simplest kind of changing and saves time and lost production.

The machine operates at 220 rev. per minute, or the same speed as the diagonal machine, so that the provision for an unlimited range of patterns has not been secured at the expense of production. In fact, the machine is remarkably simple. There is no limit to the yarns or yarn combinations that can be knitted into men's, women's, boys', children's, and sport hosiery; wool can be run with rayon; cotton with wool, silk, or rayon; silk with rayon, wool, or cotton; in fact, any yarn combinations wanted can be used.

Improved Silk Shuttle

Ear Clips Made of Continuous Piece of Metal

An improvement in the design of their silk shuttles has been made by I. A. Hall & Co., Paterson, N. J. The ear clips are now formed from a continuous piece of metal, thus creating a substantial spindle head and spindle spring container and permitting the two spindle spring pins, the spindle pin, and the spindle rest pin to be driven through the metal arrangement into the wood of the shuttle block. The strain on the spindle pin is thereby distributed over all four pins, and loose ear clips are eliminated. Additional support is given the spindle, and the possibility of the shuttle splitting along the pins is claimed to be reduced to a minimum. The material used for the continuous ear clip is wide and of heavy gauge, designed for long wear. The improvement is intended to meet the conditions resulting from the demand for long quills or cops, which require longer and heavier spindles and stronger spindle springs.



Improved Silk Shuttle with Ear Clips Made of Continuous Piece

BARGAIN! BARGAIN!
WHO'S GOT THE BARGAIN?

"PEOPLE don't want clothes to *wear,*" says the short-sighted manufacturer, "they want clothes to look at for a while and then throw away."

"Here's a chance for a sensational price sale," chuckles the department store buyer.

"Oh, look at these bargains, Mayme!!" cries the typical shopper.

Now begins the other half of the vicious circle.

"I'll never buy at that store again. Just look at the way the color faded out of that dress."

"You needn't bother opening that sample case. All I got from that last order I gave you were complaints, complaints, and more complaints."

"Business isn't so good somehow. People aren't buying the way they used to. Have to cut prices on the whole line, I guess."

And so the vicious circle will continue until the fact is recognized that—

DU PONT DYESTUFFS
REG. U. S. PAT. OFF.

Everybody gets more for their money in

FAST-DYED FABRICS

E. I. DU PONT DE NEMOURS & CO., Inc. *Dyestuffs Department* WILMINGTON, DELAWARE

See also CONSOLIDATED TEXTILE CATALOG

QUESTIONS AND ANSWERS

Service on Mill Problems and Correspondence With Readers

Lifter Calculations When Using New Size Bobbin

Technical Editor:

Regarding the figuring of the side and pulley gears on a worsted spinning frame, in ordinary practice it is customary to use proportion. However, assume a new size bobbin is introduced. It is 6 in. long, 1½ in. flange, and 1-in. barrel. The nearest bobbin to it in use is one with the following dimensions: 6 in. long, 1-in. flange, ¾-in. barrel, on which we are spinning 1/26s one quarter blood, 13 turns, using 7 dram roving, 10 draft, 80 side gear, 40 pulley gear, 100 worm-shaft gear. A side of one hundred bobbins weighs about 5 lbs.

I wish to avoid a lengthy calculation and desire to know if it is practical to use a comparison of the two bobbins to obtain the required gears. Or would another method prove better? I wish to instruct a group of young men in this problem and would appreciate your reply with this in view. The method used in textile books is both lengthy and impractical. (6332)

The size of the pulley gear or side gear must be varied in inverse proportion to the change in area of the winding surface. In this particular example the length of the bobbin may be ignored because the same gears would be required for a 5-in. as for a 6-in. bobbin. The areas of circles increase in a ratio equal to the square of the diameters. A 4-in. diameter circle would have an area four times that of a 2-in. circle.

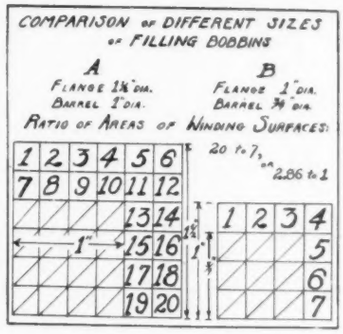
Proof: $4 \times 4 = 16$.
$2 \times 2 = 4$.
$16 \div 4 = 4$.
Ratio of areas = 4 to 1.
Ratio of diameters = 2 to 1.

With a filling bobbin, the actual area of the winding surface is affected by the diameter of the barrel of the bobbin. This is equal to [(Full Dia.)² x .7854] — [(Barrel Dia.)² x .7854] = Actual area of winding surface.

Having found the areas of winding surface for each size of bobbin, find the ratio between them and use this as a coefficient in the calculation for a new gear. An increase in ratio would call for a reciprocal decrease in the size of pulley or side gear because it takes longer to fill the larger area.

The accompanying sketch illustrates graphically the ratio of the areas of the two bobbins referred to in the inquiry. This illustration will be very helpful when explaining this problem to the group of young men to whom you refer. It shows how the ratio is derived and explains why the diameters must be squared. Taking your example, the coefficient to use would be derived as follows:

(A) Full bobbin = 1½ in. diam.
Barrel of bobbin = 1 in. diam.
Area of winding surface = $(1.5 \times 1.5 \times .7854) - (1 \times 1 \times .7854) = .9817$ in.



Comparison of Winding Surfaces of Different Sizes of Bobbins

(B) Full bobbin = 1 in. diam.
Barrel of bobbin = ¾ in. diam.
Area of winding surface = $(1 \times 1 \times .7854) - (.75 \times .75 \times .7854) = .3436$ in.
Ratio of A to B = $.9817 \div .3436 = 2.86$

As the ratio is sufficient we may omit the factor .7854 in the above calculations and proceed as follows:

$A = (1.5 \times 1.5) - (1 \times 1)$
$= 2.25 - 1$
$= 1.25$ in.
$B = (1 \times 1) - (.75 \times .75)$
$= 1 - .5625$
$= .4375$ in.
Ratio of A to B = $1.25 \div .4375 = 2.86$

The figure 2.86 may be used as a coefficient when changing the frame and changing size of bobbin at the same time. If 5 lbs. can be put on 100 bobbins of the smaller size, then the larger size should contain

$5 \times 2.86 = 14.3$ lbs.

We doubt the figure given as representing the capacity of the smaller bobbin; viz, 5 lbs. Suppose you are changing the frame to 1/18s, quarter-blood, 9 turns; frame is now running on counts given in problem with small bobbin. Using the larger bobbin find the new pulley gear.

$$\frac{40 \times 26 \times 13}{18 \times 9 \times 2.86} = 29.2$$

= 30 pulley gear.

We have tried to comply with the request contained in the inquiry and trust that the conditions have been met.

Cloudy Spots in Stocking

Technical Editor:

I am sending you a stocking on which I would very much appreciate your report as to the cause of the cloudy spots or parts which look almost like a slug. (6345)

An examination of this stocking showed that there were a great many spots where the texture was bad throughout the leg, but that the foot was clear. These spots had the appearance commonly produced by considerable handling which caused pulled ends. But there are none of the pulled threads which there would be if this were the cause.

An analysis of the stocking showed a very uneven silk. This was not the usual type of unevenness which causes "bands" or "rings," but was heavy spots for short lengths and in the worst spots loose ends knitted in with the regular yarn. By this is meant strands that did not belong where they were knitted in, but which doubtless were part of the yarns being knitted.

In some respects this had the appearance of a fabric made of rewound yarns. Yarns which have been knitted once and rewound are apt to have fibers broken here and there. The latter often slip along the strand a distance before being carried along by the others and so make a bunch. The worst of the bunches in the knitted fabrics seem to be of this nature.

There were other places where the yarn seemed to have a corkscrew effect in the twist. It looked somewhat as though two strands had been twisted to make the final strand and one had twisted around the other. This causes the strand to be of different appearance and could be held responsible for some of the less conspicuous places. At some other places the yarn just seemed to be coarser than normal and so made the small bunchy effects.

* * *

(From Mexico)
FABRICA DE TEJIDOS DE PUNTO
Articulos Superiores
RICARDO MONTES DE OCA
Leon, Gto., Mex.

TEXTILE WORLD,
New York City.

I thank you very much for your useful information contained in your kind letter dated the 14th inst. and enclosure.

I am going to proceed as instructed and trust to get satisfactory results.

Thanking you very much again and again, I remain,

Very sincerely yours,
Signed p. RIC. MONTES DE OCA
S. G. Ego

Relative Twist

Technical Editor:

Can you give me a formula to figure relative twist? I have some knitting yarn to make, 2/18s and 2/26s, one-half blood wool. The 2/18s calls for 4 turns and the 2/26s has to be relative to that. How can I figure this out? (6349)

Relative twist is based upon the diameters of the respective yarns. The diameters of yarns do not vary according to the difference in the counts, but according to the square root of the counts. The turns, in relative twist, increase in indirect proportion to the decrease in the diameter. The solution to your problem would be as follows:

$$\frac{4 \times \sqrt{26}}{\sqrt{18}} = \text{required relative twist}$$

or

$$\sqrt{\frac{4^2 \times 26}{18}} = 4.8 \text{ turns}$$

This result will not produce the same effect in the twisted yarn as was obtained with 4 turns in the 1/18s, because the twist in the single does not vary according to the square roots of the respective diameters. You may have to increase the turns to produce the desired effect and probably if you multiply the 4.8 turns by the co-efficient 1.2 or 1.3 you will obtain a satisfactory twist.

$4.8 \times 1.3 = 6.24$ turns
$4.8 \times 1.2 = 5.76$ turns

* * *

Fabric Has a Greasy Feel

Technical Editor:

We are sending a piece of material which we scoured and fulled with a little alkali to get a better feel, using ammonia as an alkali. However, the fabric feels very greasy. Can you tell us what to use to get a good soft woolly feel? (6344)

The sample does not seem to be scoured enough. It has a distinct greasy smell. Ammonia alone will not remove the oils, etc. A light scouring with a good neutral soap and a small amount of soda ash will improve the goods very much. The foreign matter will go into an emulsion with the soap and soda ash

In this department, we undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. In this way answers can be given which will be of immediate technical value to the correspondent and to others in the same line. Inquiries pertaining to textile processes, machinery improvements, methods of management, the markets, etc., are especially invited as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as an evidence of good faith. The identity of those seeking information on technical subjects will not be disclosed.

If the question is not of general interest to textile readers and involves expensive investigation, a charge covering the cost may be made, of which the inquirer will be advised before any expense is incurred.

Letters expressing opinions or voicing criticism will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.

For prompt service, technical inquiries should be sent directly to the Technical Editor, TEXTILE WORLD, 65 Franklin St., Boston, Mass.

R&H
REG. U.S. PAT. OFF.
CHEMICALS AND SERVICE

Play a vital part in the daily life of John Doe

ETCHED in relief by the spot light the leading lady is emblematic of romance. Silvery gleams cause her Platinum jewelry to sparkle. There is romance too in the story of R & H Platinum production. Brought from faraway Russia or Central America the recalcitrant metal must be smelted at high temperatures and drawn thru diamond dies.

John's enjoyment of the play is heightened by the fact that he is comfortable. The soft plush of his seat was dyed with Formic Acid, Formaldehyde and other chemicals. Many trimmings of the Theatre seem to be heavy bronze-plated with Zinc and Copper Cyanide, Cyanegg and Polysulfide; beautiful tile and bits of terra cotta lend a delicate-hued scheme to the whole, in which R & H Ceramic colors and golds undoubtedly did their part.

Here and there in the audience are seen white furs, often with white feather fans to match—thanks to chemicals, for their whiteness is due to bleaching with Albone. Silk stockings and silk dresses, pleasingly in evidence, also owe a debt to chemicals—Albone, Glauber's Salt, Formaldehyde, Formic Acid, Oxalic Acid, Bichromates and Sodium Phosphate (diabasic); while the cleaning agents, Chloroform, Trichlorethylene or Carbon Tetrachloride saved many a gown that otherwise might not have been there.

On warm summer days, the theatre is comfortably cool, probably with Arctic (R & H Methyl Chloride) as the refrigerant.

(Next seen, John is on his way home.)

The ROESSLER & HASSLACHER CHEMICAL CO.
709 SIXTH AVENUE, NEW YORK, N.Y.

Questions and Answers—Continued

and be carried out with the wash water.

Take 5 oz. of a neutral soap and 1 oz. soda ash to the gallon of water and make up a scouring soap. Use just enough to make a nice lather in the washer. Perhaps 3 or 4 parts of the soap solution to eight pieces will be enough. You can judge by observation. Run the goods half an hour at 120° F. in the soap. Drop the soap and run in a foot of warm water and give the pieces 10 min. in this water. After this, wash off the usual way and extract. If you wish to full the goods, run them in the mill and dry full them, taking them out and drying as usual.

* * *

Crepe Construction

Technical Editor:

We enclose herewith a little swatch of finished crepe. The dyer claims that he cannot give a shrinkage in the boil-off below 38 in. The goods are woven fully 43 in. in reed, and we desire the finished goods to be 39 in. Filling is a 4-thread, 60/65 turns. Would it be better to use 65/70 turns in order to make the shrinkage? (6310)

The sample submitted is only about 1½ in. across the piece, and therefore rather difficult to judge. However, from the description, this is a fault that occurs at more or less frequent intervals, as some lots of 4-thread do not seem to shrink quite as much as others.

The cloth seems to count about 88 picks as it is, without tension, which would lead us to believe that the cloth is coming from the loom with 84 picks. For a cloth as heavy as the sample, this is rather a high pickage for a 60/65, 4-thread, and while most of the goods will no doubt finish properly, it would be safer to use 65/70 twist or even 70/75.

In such instances where the dyer has trouble in shrinking goods sufficiently in the boil-off, it is often necessary to tenter them out to 40 or 40½ in. in order to get the proper effect in the finished state.

* * *

Sleazy Knitting on Full-Fashioned Hosiery

Technical Editor:

We are experiencing trouble with loose or sleazy knitting on our full-fashioned hosiery. We are enclosing a portion of a fashioned stocking in the gray and also a dyed stocking. You will note that there are a great many uneven stitches in the silk in the finished stocking. We have tried the same silk by knitting more courses to the inch and also less courses to the inch than are now in the sample, but with similar results. We will appreciate it if you will advise us how to overcome these loose stitches. (6347)

This sleazy knitting is a fairly common trouble today, and is very difficult to eradicate. It is due to a number of loops in one course being inclined either to the right or left of their normal position. The loops in the next course are inclined in the opposite direction. This breaks up the surface of the fabric, giving a zig-zag effect to the wales in some places. As the light reflection varies, it makes this zig-zag streak stand out more conspicuously.

Our feeling is that basically the trouble arises from using too fine a yarn for the gauge of the machine. Other factors which might contribute to a minor extent are uneven oiling of the yarns or uneven twist. Inasmuch as twist is present in such small quantities in these yarns, it does not seem likely that twist can be held responsible for it, and in tests in other cases of a similar nature we have found nothing to warrant blaming uneven twist for it. However, the fabric texture which gives this sleazy appearance is exactly that which might be expected from yarns of varying twist.

In connection with oiling, if yarns are not uniformly oiled to begin with, or if they are allowed to stand for some time after oiling where it is possible for them to dry out on the exposed surface, they might produce a fabric like this. However, where the yarn is so fine for the gauge, the fabric cannot help but be of a loose texture, which means that adjacent loops cannot assist in holding other loops in place, which allows a great deal of play for the loops to incline to one side or the other, and so where this trouble would not be encountered in heavier stockings it is quite apparent in present-day chiffon stockings, many of which are composed of about one-half the yarns considered suitable for the gauge of the machine.

Another thing that might help in this connection is to watch the boarding of the stockings closely to see that the stockings do not stand around so long that the exposed areas of the pile of wet-out stockings become nearly dry. If this happens, it is quite likely that the areas which dry before boarding will not look quite like those dried on the forms.

* * *

Finishing Elastic Webbing

Technical Editor:

We would appreciate it very much if you could give us some information in regard to the finishing of the enclosed sample of elastic web. First, is it steamed and dried on the drums or submerged with dressing? Second, what are the tensions entering the bath, at the squeeze rolls, and on the drums? (6356)

The method to be used in finishing this web will depend upon the effect desired. If it is required to be dressed on one side only it might be run directly from the loom boxes, or baskets, and over a guide rod to the squeeze rolls. Here it would pass between the two squeeze rolls; the bottom roll only being submerged in the dressing bath and that only far enough to coat the face of the roll.

If it is desired that the entire web be dressed on both sides (and that is probably the case), it will be necessary to run the material under the bottom roll; which means, of course, that it will become entirely submerged. It will then pass through, or between, the squeeze rolls and back over the drums in the usual manner.

There should be no tension placed upon the goods as they enter the bath, other than that supplied by the guide rod which is usually placed between the baskets or boxes and the squeeze rolls, and about six feet in the air. Neither should there be any tension at the squeeze rolls or on the drums, other than just enough to keep the goods hugging the cylinder sufficiently to dry.

If this material should be heavily sized and dried under tension the yardage would be greatly increased, and this would probably be the basis for a complaint from the customer.

Cotton Spindle Activity for December

WASHINGTON, D. C.,—The Department of Commerce announces that according to preliminary Census figures 36,494,496 cotton spinning spindles were in place in the United States on Dec. 31, 1927, of which 31,715,388 were operated at some time during the month, compared with 32,269,478 for November, 32,497,504 for October, 323,343,454 for September, 32,239,246 for August, 32,324,426 for July, and 32,489,570 for December, 1926.

The total number of cotton spinning spindles in place, the number active, the number of active spindle hours and the average spindle hours per spindle in place by states, are shown in the following statement:

State	Spinning Spindles (in thousands)		Active Spindle Hours for Dec.	
	In Place Dec. 31	Active during December	Total	Average per spindle in place
U. S.	36,494	31,715	7,859,363,372	215
Cotton Growing	18,399	17,891	5,193,457,235	282
New England	16,447	12,380	2,389,933,270	145
All Other	1,646	1,443	275,972,867	168
Ala.	1,590	1,513	395,526,056	249
Conn.	1,131	1,062	234,450,658	207
Ga.	3,047	2,975	847,055,437	278
Me.	1,117	922	173,210,643	155
Mass.	10,229	7,311	1,337,904,684	131
Miss.	175	159	49,469,914	282
N. H.	1,421	1,019	229,677,589	162
N. J.	378	375	65,256,676	172
N. Y.	863	710	132,956,476	154
N. C.	6,200	6,017	1,706,313,170	275
R. I.	2,402	1,947	385,120,466	160
S. C.	5,453	5,396	1,756,372,936	322
Tenn.	603	581	162,040,311	269
Texas	274	246	70,970,644	259
Va.	714	688	128,187,810	179
All Other	890	738	184,869,902	208

IN the ranks of textile workers there are many capable, ambitious people awaiting a bid for something better. Present *your* opportunity to them via the Clearing House, as this Philadelphia mill has done —

WANTED

Weaver, experienced on wide duck looms who has advanced to a loom fixer and possibly a foreman — a man above the average who is ambitious to advance.

Address Adv. —, Textile World

This advertisement run four times brought 29 replies. The advertisers state — "we believe we have been successful in obtaining a man for the position." Use the Clearing House. See pages 104 to 107 this issue.

Best Drafts and Settings

(*Continued from page 39*)

ton and to study thoroughly the drafting process.

The machine in question consists of four bottom rolls of ⅞-in. diameter, of which the front one is propelled by a crank handle, while the other three get their movements by means of changeable gears from the front roll. The roll stands are of a sliding type and can be readily adjusted to suit any arrangement. The supports for the top rolls are also adjustable, and are constructed to receive rolls from either drawing, roving, or ring-spinning frames. Openings are provided for weighting the roll. A creel for two bobbins is attached in the rear.

By introducing a sliver or the sliver lap in the adjusted rolls, it can be easily seen whether or not the setting of the rolls is correct for the type of cotton in question. A light pressure with the edge of a thin cardboard on the sliver between the front roll and second roll will show by its resistance whether an excessive number of the fibers is still caught by both top rolls or whether the distance is too large. In the latter case, the fibers will not offer any resistance to the pressure of the cardboard. The distance has to be decreased or increased accordingly until the fibers react only to a light pressure of the cardboard. A board covered with black velvet is attached near the front rolls, and facilitates an exact analysis of the roving in the drawn state.

The apparatus is so constructed that the rolls, weights, etc., of the regular machines can be used. It is provided with graduations and a table to determine and adjust the distances. The apparatus measures about 38 by 12 in. and weighs about 150 lbs. without top rolls.

RECENT TEXTILE PATENTS

PILE fabric, Novelty. 1,655,200. W. S. Stairs, Philadelphia, Pa. Assigned to Marshall Field Mills Corp., Philadelphia, Pa.

RAYON, Treatment of. 1,655,097. E. K. Gladding, Buffalo, N. Y. and T. E. Sharpe, Old Hickory, Tenn. Assigned to Dupont Rayon Co., Inc., Buffalo, N. Y.

SHUTTLE spindle. 1,655,084. O. J. Benoit, Woonsocket, R. I. Assigned to Shambow Shuttle Co., Woonsocket, R. I.

SPINNERETS, Making. 1,654,936. H. J. Jones, Irvington, N. J. Assigned to Baker & Co., Inc., New Jersey.

SPINNING machines, Tension flyer for. 1,655,352. E. Babcock and W. P. Watson, Phillipsburg, N. J.

SPOOLER'S knotter. 1,655,011. B. E. Byrd, Durham, N. C. Assigned to Mill Devices Co., Durham, N. C.

TENSIONING device. 1,655,368. Z. L. Harbin, East Gastonia, N. C. Assigned one-half to Emanuel Frohman, East Gastonia, N. C

THREAD or like, Covered elastic. 1,655,089. L. B. Chisholm, Stoneham, Mass.

Take Chemicals from the Textile Industry

and you would filch from fabrics their gorgeous hues, their delightful sheen, their appealing brilliancy, leaving them dull and drab, listless and lusterless. Flat homespuns and unbleached cottons would be in the ascendancy. Bleaching, dyeing, printing, and finishing would revert to primitive methods.

In the textile industry there probably is in use the greatest variety of chemicals and chemical reagents of any single industry in the world. The requirements of the industry have been anticipated by the American Cyanamid Company, which has developed a wide line of textile chemicals, plus a highly specialized service, to meet every present-day demand.

Dependable service — Prompt shipment in any desired quantity to all consuming areas by rail, water, or truck from our New York Harbor plant at Warners, N. J.

Kindly address inquiries to the Textile Chemical Division

Anhydrous Ammonia	*Zinc Dust*
Aqua Ammonia	*Sulphocyanides*
Carbonate of Potash	*—Ammonium, Calcium,*
Copper Sulphate	*Sodium, Aluminum,*
Dicyandiamid	*Lead, Barium*
Formic Acid	*Thiourea*
Lead Acetate	*Urea*
Red Prussiate of Potash	*Yellow Prussiate of Potash*
Sal Ammoniac	*Yellow Prussiate of Soda*

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MILL NEWS

COTTON

New Construction and Additions

*International Shoe Co., St. Louis, Mo., has selected Malvern, Ark., for the location of its cotton mill to manufacture shoe lining and canvas gloves. The plant will cost between $750,000 and $1,000,000. Construction will begin as soon as citizens of Malvern collect a fund pledged by business interests to acquire the site for the structure. If tentative plans materialize, the company will probably build additions to the plant and erect shoe lace braid and heavy thread factories as units of the Malvern plant. Electric power is available from the hydro-electric plant at Remmel dam.

Wadesboro Cotton Mills Co., Wadesboro, N. C. An enlargement project for this mill has been authorized, but no definite announcement of plans has yet been made.

*Rhode Island Plush Co., Woonsocket, R. I., has roofing in progress on its new mill addition on River St., and will soon occupy the structure.

*Appleton Co., Anderson, S. C. Potter & Shackelford, Inc., contractors, announce that the following sub-contracts have been awarded on the new weaving building for the Appleton Co.; structural steel, F. E. Golian Co., Atlanta, Ga.; steel sash, Detroit Steel Products Co.; roofing, Ramseur & Lee Roofing Co., Greenville, N. C.; cast iron pipe, American Cast Iron Pipe Co.; and treating roof plank, Piedmont Wood Preserving Co., Augusta, Ga. Thirty thousand spindles and 750 looms will be added to present equipment when the new building is complete. J. E. Sirrine & Co. are the engineers.

*Chiquola Mfg. Co., Honea Path, S. C. Sub-contracts for work on the extension to the Chiquola Mfg. Co. cotton mill are as follows: Greenville Steel & Foundry Co., structural steel; David-Lupton Sons Construction Co., steel sash; American Cast Iron Pipe Co., cast iron columns; J. A. Piper Roofing Co. for roofing. The four-story extension, 131 x 130 ft., will house 5000 additional spindles. J. E. Sirrine & Co. are the engineers.

*Aragon-Baldwin Cotton Mills, Inc., Whitmire, S. C., expect to award a contract for the erection of about fifteen additional modern residences at their Whitmire plant. A number of new residences on a former contract at the Whitmire plant are now nearing completion.

*Halifax Cotton Mills, South Boston, Va. The towel manufacturing plant and the new bleachery plant of the Halifax Cotton Mills are now in operation. In addition to the increased manufacturing facilities the company has made improvements in sidewalks and roadways around the plant and has under construction many new dwellings to house the additional number of employes secured for the new work.

Fact and Gossip

Lowe Mfg. Co., Huntsville, Ala., is said to be preparing for the installation of a considerable quantity of new machinery. C. W. Causey, president of the company, came from Greenville, S. C., recently to inspect the plant.

*Elizabeth Bartlett Mills, Acworth, Ga. The mill building of this new drapery plant is now finished, and equipment will be installed and ready for operation by March 1. The first installation will include twenty-four Stafford broad looms, equipped with Halton jacquards. Electric power will be used.

Southern Mfg. Co., Athens, Ga. D. C. Collier, Barnesville, Ga., has been elected president of the Southern Mfg. Co. to succeed the late Billup Phinizy. J. C. and D. C. Collier operated the Collier Mills, Inc., at Barnesville and Macon, Ga., and are now sole owners of the Eatonton (Ga.) Cotton Mills. C. H. Newton was elected vice-president and H. F. Patat, secretary and treasurer.

Jewell (Ga.) Cotton Mills Co. A large insurance claim for a fire loss is being paid by various fire insurance companies for the loss of the Jewell Cotton Mills Co.'s plant last summer. The companies are paying the owners the full amount of their claims, giving them the salvage also. It is reported that the entire claims paid will amount to $100,000 or more. Although no definite information has been given out, it is understood that the owners of the burned mill are planning to rebuild on the same site immediately.

Dwight Mfg. Co., Chicopee, Mass., has closed for two weeks, possibly longer.

Lancaster Mills, Clinton, Mass., have made a 10% wage reduction effective on Jan. 30, the first in three years. The management also announced that for reasons of economy the nursery where children of employes have been cared for during working hours will be closed.

American Printing Co., Fall River, Mass., has resumed operations under a 10% cut in wages which was accepted under protest.

Butler Mill, New Bedford, Mass., is maintaining operations in the weaving department at close to 80% of capacity, and expects to continue on this basis for a number of weeks.

Grinnell Mfg. Corp., Nashawena Mills and Pierce Bros., Ltd., New Bedford, Mass., have reduced production to about 65% of capacity and will hold to this schedule for an indefinite period.

*Amoskeag Mfg. Co., Manchester, N. H., is installing in its Coolidge Mill several hundred looms recently removed from its Parkhill Mill, Fitchburg, Mass. With this more modern equipment it will be possible to do finishing at Manchester. It is expected to complete installation in 30 days.

Brighton Mills, Passaic, N. J., have leased a portion of three-story mill formerly occupied, totaling about 30,000 sq. ft. floor space, to Atlantic Aircraft Co.

New Hartford (N. Y.) Cotton Mfg. Corp. has elected the following officers: William M. Osborn, president; J. P. Mulhall, vice-president and secretary; Harold P. Osborn, treasurer.

Walcott & Campbell Spinning Co., New York Mills, N. Y., is again running on full time weekly schedules after the annual inventory.

*Burlington (N. C.) Processing Co., recently organized, has begun the manufacture of mercerized yarns.

Ranlo Mfg. Co., Gastonia, N. C., has started on full time operation after having curtailed two days each week for several weeks.

Cora Cotton Mills, Kings Mountain, N. C. O. G. Falls, president and treasurer of the Cora Cotton Mills, has sold his interest in the business to A. G. Myers, president and treasurer of the Dilling Cotton Mills, Kings Mountain.

Sanford (N. C.) Cotton Mills. At the annual meeting of stockholders the regular semi-annual dividend of 3% was declared and the officers of the company, J. C. Watkins, president; George Woolcott, vice-president, and J. R. Jones, secretary and treasurer, re-elected.

*Appleton Co., Anderson, S. C., is operating on a 55-hour week basis. The Lowell, Mass., plant, has ceased operation and the shipment of 30,000 spindles to the South Carolina mills has been started.

Toxaway Mills, Anderson, S. C., sustained damage estimated at $15,000, when fire destroyed a mill warehouse last week.

Red River Cotton Mills, Carhartt, S. C., have been closed for a week. The shutdown may be extended to a two-week period.

Fort Mill (S. C.) Mfg. Co. is operating on a four-day-a-week night and day basis now.

Cascade Mills, Inc., Mooresville, N. C. The following directors have been elected for 1928: T. B. Spencer, E. W. Brawley, W. C. Johnson, J. L. Harris, D. K. McNeely, G. W. Taylor, C. P. McNeely, A. E. Bell, G. C. Goodman, G. G. Ludwig, Roy K. McNeely, and H. S. Rossell. T. B. Spencer is the new president; E. W. Brawley, vice president, and Roy W. McNeeley, secretary and treasurer.

Whitmire (S. C.) Plant, Aragon-Baldwin Cotton Mills, Inc., is at present on a slight curtailment program, closing Fridays at noon.

*Dallas, Tex. Two hundred thousand dollars has been subscribed to date for the new $900,000 cotton mill to be erected in Dallas. Plans for the plant will be drawn within 30 to 60 days and a company formed to operate.

Riverside and Dan River Cotton Mills, Danville, Va., announce a half-day cut in working schedules because of the unfavorable condition of the cotton goods market.

WOOL

New Construction and Additions

Amos Abbott Co., Dexter, Me., have recently installed 8 Crompton & Knowles automatic looms and three Franklin Process dyeing machines.

*Oriental Textiles Co., Ltd., Oshawa, Ont., Canada, has installed 21 additional broad looms, thereby doubling their capacity for 1928.

Fact and Gossip

Berkshire Woolen Co., Pittsfield, Mass., at its annual meeting last week reelected its officers and declared a 3% semi-annual dividend.

*John McLaren Woolen Mills, Inc., Glenham, N. Y., expect to reopen the former Braeburn Woolen Co. plant late in February.

P. H. Sochier Yarn Mill, Watervliet, N. Y., has leased the building formerly used for yarn manufacture by the Roy Woolen Co., Watervliet. The Roy Woolen Co. will continue to do weaving and finishing in their main building. This company is planning to discard the looms in the lower weave room and replace them with new ones in the near future. At the P. H. Sochier Yarn Mill baseball yarns are manufactured.

John J. McCloskey, Inc., Philadelphia, Pa., has been chartered with a capital of $250,000, to operate a local woolen mill. Harry E. Gerhard, Philadelphia, is treasurer. The incorporators include Alexander Love, Jr., and Grover C. Ladner, Philadelphia.

Charles W. Poulson & Sons Carpet Co., Inc., Philadelphia, Pa., has arranged for a change of company name to Overbrook Carpet Mills, Inc.

*Murfreesboro Woolen Mill Co., Inc., Murfreesboro, Tenn., recently reorganized, reports a capitalization of $50,000. A. L. Todd is again president of the company; J. L. Walker is treasurer.

Wisconsin Spinning Co., Onalaska, Wis. At their annual meeting stockholders were informed of a 66% gain in business during 1927 over the previous year. Officers were reelected as follows: L. J. Killian, president and general manager; C. A. Hunt, vice-president, and D. R. Jehlen, secretary-treasurer.

KNIT

New Construction and Additions

Gold Hosiery Co., New York, N. Y., has plans maturing for its proposed one-story and basement mill and boiler house at Milroy, Pa., to cost approximately $150,000, with equipment, and will begin work early in the spring. Levy & Berger, Brooklyn, N. Y., are the architects.

*Juvenile Hosiery Mill, Greensboro, N. C. Sub-contracts on the Juvenile Hosiery Mill awarded by Burns-Hammond Construction Co., are: Structural steel, Carolina Steel & Iron Co.; plumbing, Hunt Bros.; roofing, North State Roofing Co. Engineers are J. E. Sirrine & Co.

*Clyde Mills, Inc., Newton, N. C. With the recent completion of the two large modern brick cotton warehouses at Clyde Mills Nos. 1 and 2, the doubling of power plant capacity and the erection of a separate dye plant, all installation of new machinery and revamping of mill operations have been finished.

*Bossong Hosiery Mill, Inc., States-

*Indicates previous mention of project.

H. KRANTZ SOEHNE - AACHEN

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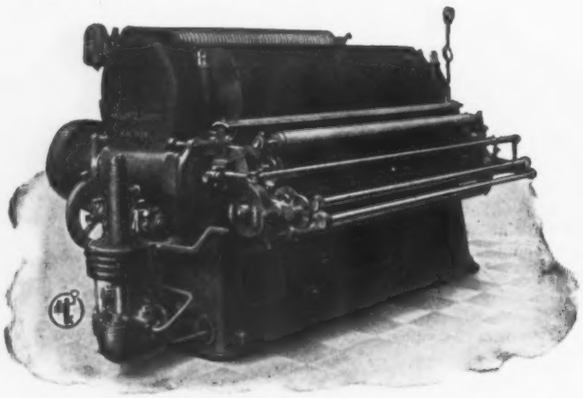

Patented Hydraulic Rotary Press

THE KRANTZ HYDRAULIC PRESSES

Insure absolutely even pressure over the whole width and length of the fabric; no matter whether one side runs a little heavier than the other.

The pump and an accumulator directly built on the machine automatically keep the pressure at the level set by the operator.

The Krantz Rotary press is easy to operate and not more expensive in first cost.

Ask For Pamphlet 224

See also CONSOLIDATED TEXTILE CATALOG

SOLE REPRESENTATIVE **ALFRED SUTER** TEXTILE ENGINEER 200 FIFTH AVENUE NEW YORK

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GENERAL AGENT FOR U. S. A. AND CANADA

Mill News—Continued

ville, N. C. Work is progressing on the construction of this new mill. The building will probably be completed within 90 days.

*Phoenix Mills, Inc., Statesville, N. C. Several carloads of machinery have been installed in the new plant of Phoenix Mills, Inc. Operation will begin very soon. This is the first unit of the mill. It is reported that the company plans the eventual construction of other workrooms which will bring the floor space to 250,000 sq. ft.

Jantzen Knitting Mills, Portland, Ore., have begun the construction of a new unit at East Glisan and Eighteenth Sts. This addition will add 9200 square feet to the storage facilities of the company, and will be of steel and concrete construction. Specifications call for completion within thirty days.

*Guarantee Knitting Mills, Philadelphia, Pa., manufacturers of sweaters, are now located in their new building at B and Lippincott Sts., where they occupy 12,000 sq. ft. They have added 10 new knitting machines and one new winder which will be in operation by Feb. 1. They had an equipment of more than 17 knitting and 12 sewing machines at their former plant at Howard and Norris Sts., which is now in operation in the new location.

Rodgers Hosiery Co., Germantown, Pa., have awarded contract for the erection of a new mill building to cost $60,000.

Windsor Knitting Mills, Inc., Hamburg, Pa., are reported to have installed four additional Scott & Williams knitting machines.

Best Made Silk Hosiery Co., Quakertown, Pa., has decided upon an expansion program which will double its capacity. A 5,000 sq. ft. addition will be built and full-fashioned knitting machines installed. Plans will be ready for contractors within the next two weeks and ground will be broken as soon as possible so that the building will be ready for occupancy before June 1.

Oakbrook Hosiery Mills, Inc., Reading, Pa. It is reported that this concern, manufacturers of full-fashioned hosiery, is installing new dyeing machines to dye yarn for use in the manufacture of ingrain hosiery.

Schuylkill Haven Knitting Mills, Schuylkill Haven, Pa., have increased their plant by the addition of four knitting machines and six finishing machines. Additional help has been employed.

Cacoosing Knitting Co., Inc., Sinking Spring, Pa., has added six additional knitting machines to the equipment of the plant and is operating with a full force of help on full time.

Volunteer Knitting Mills, Chattanooga, Tenn., have recently installed a number of spring-needle knitting machines. Plans are under way for the manufacture of spring-needle underwear in addition to the regular production.

*Landers, Ltd., Guelph, Ont., Canada, are building a one-story addition, 48 x 70 ft. When equipped with machinery the capacity of the plant will be doubled. The new addition will be in operation in March.

Fact and Gossip

Ross Knitting Mill, Rossville, Ga., is the name of a new company financed and operated by Floyd Mavity, Rossville, and A. H. Gould, Chattanooga. While only a few hands are employed at the time, the promoters expect to add more machinery gradually.

Horstmann-Columbia Co., Robbinsville, N. J., knitting department of Wm. H. Horstmann Co., Philadelphia, has discontinued the Robbinsville branch, having moved this machinery and equipment to larger quarters, and is now located at Mt. Holly, N. J., where the manufacture of fancy knit goods is being continued along the same lines as heretofore.

Clover Knitting Mills, New York, N. Y. Ernest W. Bradbury has been appointed receiver in bond of $1,250.

Aetna Mills of Wright's Underwear Co., Inc., Troy, N. Y., are shut down for the annual inventory period.

*Paramount Knitting Mills, Inc., Philadelphia, Pa. Joseph Largman, president, and Harry Largman, treasurer of this company, manufacturers of sport coats and shaker sweaters, have retired from this firm, their interest having been acquired by other partners. Chas. Caret has been elected president succeeding Harry Largman. J. Zimmerman continues as secretary and treasurer. L. M. Rosen was formerly vice-president, this office now being vacant. According to J. Zimmerman, secretary, they will continue to manufacture same lines as heretofore.

*Radmoor Mills, Inc., Philadelphia, Pa. Negotiations for the merging of the Brown-Phelps Hosiery Co. and the Glen Knitting Co. into a new corporation, Radmoor Mills, Inc., are at a standstill. Stevens & Co., Reading, Pa., the investment firm which was to have marketed the stock of the Radmoor Mills has dissolved partnership.

*Peermont Knitting Mills, Pottstown, Pa. Joseph L. Prince, who purchased recently the plant and equipment but not the realty of this knitting company, has announced that operation will begin again shortly.

*B. B. & R. Knight, White Rock, R. I. This former cotton mill has been bought by Charles H. Watmough, Attleboro, who is planning to form a corporation under the name of the Traco Finishing Co., Inc., to operate a dyeing and finishing plant. This new company will specialize in the treatment of tracing cloth, book cloth and tag cloth and in addition will arrange its facilities so that a diversification of output may be attained. The owners hope to put the plant in operation within 60 days. The four-story building has approximately 100,000 sq. ft. of floor space. About 25 acres of land were purchased with it.

Woonsocket Rayon Co., Woonsocket, R. I. Frederick L. Jenckes, head of Manville-Jenckes Co. is reported to have offered to see that a new company to manufacture rayon is organized. This new company will occupy the old Nourse mill belonging to the Manville-Jenckes Co. if the city council of Woonsocket will assure a taxation of only $200,000 for the next 10 years. The announcement that an official of International Paper Co. is interested in the formation of the new company has led to the report that material for the new product may be provided by this paper company or a subsidiary.

Union, S. C. Plans are said to be perfected for the organization of a rayon plant at Union within the next two weeks. Three-fourths of the announced capital

*Indicates previous mention of project.

Better Lubrication at *Less Cost* per month

"We Don't Have to Worry About Oil Spots Here"—

said the textile mill super to his visitor — "we use

TRADE MARK NON-FLUID OIL REGISTERED IN UNITED STATES PATENT OFFICE

MODERN TEXTILE LUBRICANT"

"See how clean we keep our looms—our floors—no danger of our goods becoming oil-spotted."

"Those bearings" — he pointed — "we had to watch constantly — or they would drop oil on the goods — now we never have to think of them — except to oil them every few weeks."

"How much more does it cost?" asked the visitor.

"More? — it costs less — that's the funny part of it—NON-FLUID OIL lasts so much longer per oiling that we save money on it."

The above conversation (an actual occurrence in a big textile mill) is representative of mill men's attitude toward NON-FLUID OIL. If you would know for yourself, send for testing sample and bulletin, "Lubrication of Textile Machinery."

See also CONSOLIDATED TEXTILE CATALOG

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Knitting Savers

When production sags in quality; when the foremen blame the operators; when the higher ups—*!x??!

Standby! Torrington Needles to the rescue.

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COVENTRY, ENGLAND
AACHEN, GERMANY

See also CONSOLIDATED TEXTILE CATALOG

Mill News—Continued

stock of $65,000 is reported to have been subscribed.

Dixie Hosiery Mills, Inc., Fort Worth, Tex., will open a dye plant to cost about $30,000.

Directors of the **Merrill Knitting Co.,** Merrill, Wis., reelected at the annual meeting several days ago, of the company, are as follows: Harold Henrich, John Rehfeld, R. C. Ballstadt, W. F. Peterman, Sr., and William Johannes.

SILK

Fact and Gossip

Bannockburn Mills, Inc., North Attleboro, Mass., a new corporation, has leased part of the T. I. Smith Co. factory and is moving in machinery for the production of silk.

***Collingbourne Mills, Inc.,** Elgin, Ill. The new mill of Collingbourne Mills, Inc., is now in operation. A. E. Palmer, manager of the Becket, Mass., plant which was destroyed by flood, will be in charge at Elgin.

***Leroy Silk Mills,** Paterson, N. J. The temporary appointment of Garret P. Westerhoff as equity receiver of the Leroy Silk Mills has been made permanent.

Utica (N. Y.) Silk Co. has started night operations because of increased business demands.

Arkay Silk Co., Wellsboro, Pa., is reported organized to operate a local mill, headed by C. E. Bennett and G. Mason Owlett, Wellsboro; and Robert Kast, New York.

RAYON

New Construction and Additions

***Skenandoa Rayon Corp.,** Utica, N. Y., has expansion plans already launched which within a few years will involve the operation of four units. Arrangements are now under way for securing the needed water supply to operate the additional mills.

***Burlington, N. C.** The construction work on the rayon plant located in Indian Village is being pushed rapidly forward. The foundation is finished, steel girders are being placed and placing of machinery is a matter of only a few days.

American Glanzstoff Corp., Elizabethtown, Tenn., according to report, will soon award a general contract for a group of buildings, as follows: Two-story and basement, 66 x 230 ft.; two-story and basement, 66 x 164 ft.; three-story and basement, 49 x 164 ft.; one-story and basement, 33 x 164 ft.; one-story and basement, 90 x 100 ft.; two-story and basement, 24 x 794 ft.; and main unit, one-story and basement, 369 x 794 ft.; boiler house, 33 x 112 ft., and power house, 66 x 112 ft. Lockwood, Greene & Co. are architects and engineers.

Fact and Gossip

DuPont Rayon Co., Richmond, Va., has filed an amendment with the State Corporation Commission increasing its maximum preferred stock from $10,000,000 to $25,000,000.

* Indicates previous mention of project.

DYE, BLEACH AND FINISH

New Construction and Additions

National Yarn and Processing Co., Rossville, Ga., will enter the rayon bleaching, dyeing and finishing field, according to announcement by President T. H. McKinney. Contract for the erection of a new brick mill construction building to house the new department has been awarded to Mark K. Wilson, local general contractor. The building will have a floor space of 100 x 60 ft., and together with new equipment to be purchased at this time will represent an investment of about $75,000. Mr. McKinney intimated that the entrance into the rayon finishing field might later develop into an even larger proposition. The plant will have an initial capacity of about 15,000 lbs. a week. Officers of the company are T. H. McKinney, president; Scott Probasco and Dr. Guy King, vice-presidents; Tom Moore, treasurer and F. H. Harris, secretary.

***Hartsville, S. C.** It is expected that the plans and specifications for the new Hartsville Bleachery, will be ready in about two weeks, when bids will be called for. The equipment of the Easton (Pa.) Finishing Co., will eventually be moved to Hartsville, but the plant at Easton will continue in operation for several months, giving the trade ample notice before the removal of machinery is commenced. Frederick B. Voegeli, president of the Easton Finishing Co., is president of the Hartsville Bleachery; and Robert W. Bole, treasurer of the Easton Finishing Co., is treasurer and sales manager.

***Renfrew Plant,** Travelers Rest, S. C. The following sub-contracts for the new plant have been awarded by the Gallivan Construction Co.: Structural steel to F. E. Golian Co., Atlanta, Ga.; steel sash to the W. M. Bailey Co., Springfield, O.; roofing to J. A. Piper Roofing Co., Greenville, S. C.; plumbing to F. W. Smith Plumbing Co., Greenville, S. C., and cast iron columns to Paul Wright & Co., Birmingham, Ala. This new textile plant for weaving, bleaching and dyeing is being built by the Woodward-Baldwin interests, and will be operated by A. W. Smith and C. E. Hatch, of Brandon Mills. J. E. Sirrine & Co. are the engineers.

Fact and Gossip

***Franklin Dye Works, Inc.,** Paterson, N. J., recently organized, has filed notice of change in company name to the Franklin Piece Dye Works, Inc. Plant operations will soon begin.

Valley Finishing Co., Inc., Pleasant Valley, N. Y., has arranged for an increase in capital from $50,000 to $71,500.

Palatine Dyeing Co., Inc., St. Johnsville, N. Y., has increased operations and is again operating near capacity.

***Central Franklin Process Co.,** Chattanooga, Tenn. It is understood that the possibility of establishing a rayon plant in Chattanooga, and the question of increasing the capitalization of the Central Franklin Process Co., are two matters which will be brought up at the annual meeting Feb. 1.

KNIT GOODS

Fair Hosiery Buying with Outlook Hopeful

Buyers Confident That Current Year's Business Will Be Satisfactory

There are still some hosiery buyers in the market, but their number is by no means as great as was the case of last week. A variety of opinion is expressed regarding the business which has been done, but the situation would seem to be less acute than in underwear. Agents for certain lines report the orders they have taken are larger than they were last year on the average, and while numerically they have not been all that could be desired, they are optimistic about the future and foresee a very fair volume of business to be received.

Buyers have expressed the idea that hosiery business during 1928 is likely to be successful, and having this attitude toward the future, it is only natural they should base their operations accordingly. No one is highly enthusiastic over what has been done so far, for the average wholesaler has pursued the same course as has been prevalent for several years. With the continuance of fancies as a prominent feature in wholesalers' lines there is not the likelihood that requirements will be anticipated. The buyer takes fancies as he needs them. Duplicates are almost an unknown quantity and where anything approaching this character of buying is noted, it is more of the filling-in variety than actual duplication of original orders.

The Fancy a Staple

This apparently contradictory statement is coming to be more and more recognized by the selling agent. It is hard to find a representative who will contend that fancies are to see their demise in the near future. There are those who claim that the tendency is toward more conservative styles and more modest patterns. This is as far as they will go and there are those who will not admit even as much as this and who foresee a continuance of the most bizarre effects, taken particularly by the western trade. Selling agents for men's fancy half hose see no particular trend in demand. They admit that for the ultra trade and in certain markets the jacquard effect is the most desirable. Stripes and plaids, however, are to be noted as prominently in the majority of lines and according to reports are receiving as much attention as ever. There is no doubt that the producer of fancies has many problems that the staple manufacturer is not obliged to confront. This is true also of the distributor and the retailer and these problems make for ultra con-

(*Continued on page 57*)

Ribbed Situation Still Mixed

Buyers Continue Uncertain on Prices—Fleeces Also Slow

WHILE no further price changes have been reported in heavyweight underwear, the feeling of uncertainty, amounting almost to demoralization, has not particularly lessened. The buyer is still hesitating and with a certain amount of justice on his side. As long as selling agents for certain prominent lines indicate that they are going to meet competition and go their competitors one better, it is only natural that the buyer should wait to take advantage of the lower level which is thus indicated. It is not at all evident that the buyer welcomes any such irregularity. As a matter of fact, he would undoubtedly be better satisfied if he could be assured that prices would remain stationary and also be confident he was buying goods on the lowest possible basis which could be established for the season. As long as this is not possible, he is cautious about his commitments and will continue in this frame of mind as long as the period of uncertainty continues.

Competition on Ribs

The irregularities mentioned above are centered most particularly on heavy-weight ribbed goods. It seems as though certain manufacturers were determined that no one was to be allowed to corral any of their business if they could help it. Even if profits are reduced or actual losses are made they still cling to the policy that they are going to get every dozen possible, even though they have to reduce their prices and cut under their competitors. The result is that for the most part business on heavy-weight ribs is still to be done. Of course, there are always exceptions to any rule and this is true in the underwear market. For instance, it is declared on unquestioned authority that in the case of one line more than 75% of the orders taken have been in excess of last year and in this particular case 1927 was the largest year the company ever had. This record may be accounted for by the service given to the trade and the care exercised in seeing that resale prices are at a level which means a profit to the wholesaler. They do not do business on the basis reported by the salesmen of a competitive concern. The latter was complaining to an important buyer that he had not bought his line of goods. He asked "Why do you buy of ....., when he obliges you to sell your product on a fixed basis. You can buy my goods and give them away if you want to." It is due to the insistence of this concern that the wholesaler shall make a profit on his merchandise which appeals to the far-seeing merchant and which causes him to feature a line on which he can be assured of a substantial margin. If there were more concerns in the business who gave particular study to this feature and to the problems of the distributor, the situation would be less mixed than it is at the present time.

Fleeces Also Affected

Reports regarding buyers' attitude toward fleeces are far from encouraging. It is not only the element of price which affects the sale of this merchandise, but it is also the evident carry-over in the majority of markets, which is influencing the buyer to operate hesitatingly on these goods. In practically all markets, with the exception of the Northwest, distributors have had unusual difficulty in merchandising their purchases of fleeces and as long as this condition obtains it is only natural to witness comparatively little activity for another season. But in addition the comparative prices on fleeces and ribs do not offer the inducement for the buyer to operate freely on the former. As one selling agent expresses it "I find that when fleeces are considerably lower than ribbed goods we have no difficulty in selling up our line, but when they approximate the price of ribs, fleeces move slowly and we cannot do anything to alter the condition. Today fleeces are on the average 25c lower than ribbed goods and this is not enough to make them a big feature in the buyer's calculations." It is true there is not the over-production in this line which is apparent on heavy-weight ribs, so that even if the total demand shows a decline from previous years, it may be possible that the few remaining factors will be able to keep their plants in operation.

Buyers Less Numerous

The number of buyers in the local market this week has not been as large as a week ago when the annual meeting of the wholesalers was held. From reports obtained through a canvass of the district, it is apparent a good many have left for home without operating extensively. This is to put it euphoniously. In other words, a large majority of those who have been here have decided to do the bulk of their buying at home. This will mean additional trips for salesmen, with added expenses and all the attendant unsatisfactory conditions, but the buyer is not to be dislodged from his position of caution with the result that he will have to be cultivated more assiduously than ever. Whether he is going to suffer by his delay in placing orders remains to be seen. On ribbed goods it does not look as though certain mills will be able to make deliveries for the first delivery period, unless orders are placed pretty soon. It is possible, of course, that they may conclude to make up stocks in order to run their plants, but it is not believed this policy will be pursued very generally, because of the attendant risk and the necessity of paying carrying charges, which naturally reduces the profit. But the buyer does not seem to be apprehensive over the situation and as long as the capacity to produce this class of underwear remains as great as it is today, he probably is justified in thus viewing the situation.

Knit Underwear Manufacturers to Meet at Utica. Feb. 15, 16 and 17

The annual meeting of the Associated Knit Underwear Manufacturers of America will take place on Feb. 15, 16 and 17, 1928, at Utica. It was first postponed from a January date until February and this second change is merely setting the meeting ahead one day from the date mentioned in these columns last week.

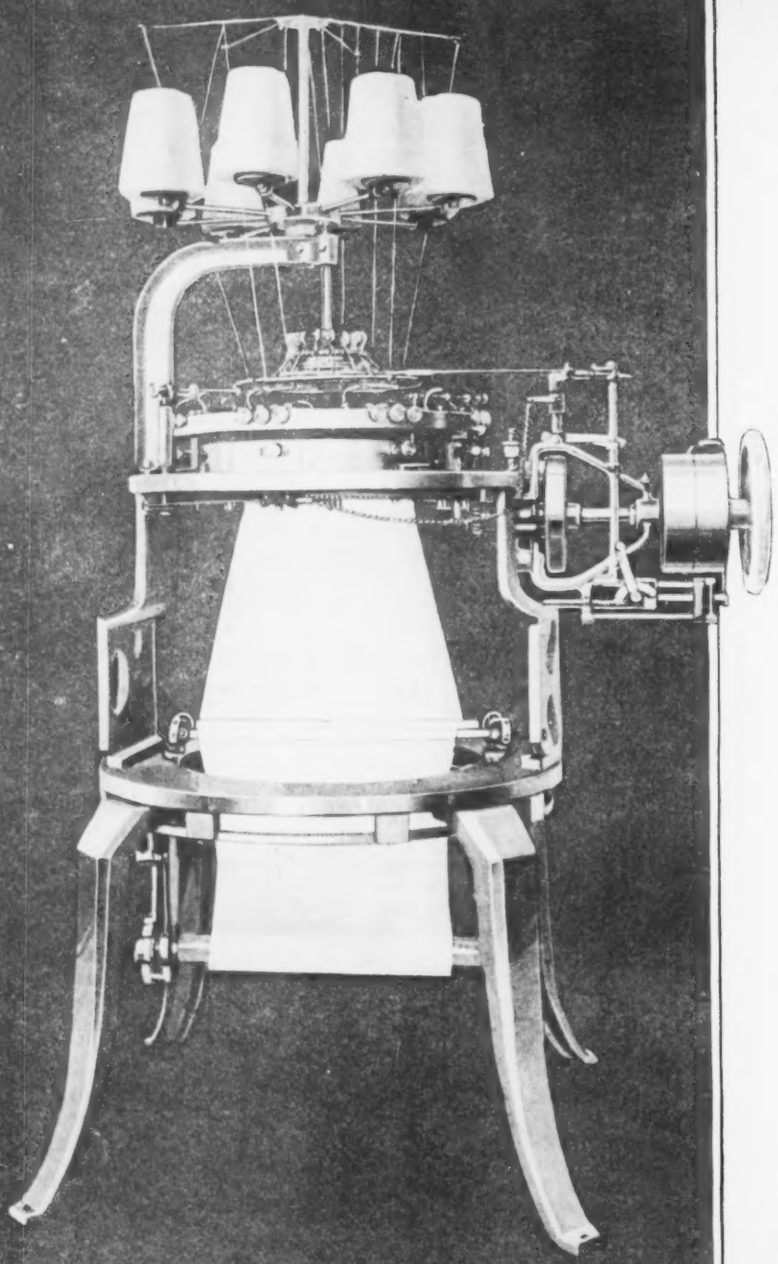
Wanamaker Selling Dollar Full-Fashioned Hose of Bemberg

John Wanamaker, of Philadelphia, is selling, as a regular line, a ladies' full-fashioned number, made of Bemberg yarn, retailing at $1.00. The stockings carry a sticker describing them as "Bemberg Hose—Made expressly for John Wanamaker, Philadelphia," and giving information regarding Bemberg yarn as well as directions for washing. It is stated that great interest has been created in the market by this new number.

Ten Firms Bid on Hosiery for Army Quartermaster

PHILADELPHIA.—Ten manufacturers of hosiery submitted bids for supplying cotton and woolen stockings on which proposals were received Jan. 20 at the depot, 21st & Oregon Ave. Proposals asked for bids on 200,000 prs., unbleached cotton stockings for enlisted men and 930,000 prs., lightweight woolen stockings, the following concerns submitting bids: Ellis Hosiery Co., Philadelphia, cotton stockings, 9.625c on half the quantity, 9.875c on second half of total amount or 9.7c on entire lot; woolen stockings, 20.75c on first third of quantity, 21.25c on the second third, 21.6c on the third or 21c on entire quantity; terms net.

Wearproof Hosiery Mills, Reading, Pa., bid on woolen stockings only, 22c net. Rambo & Regar, Inc., Read-



Mechanically correct— Wildman machinery

WILDMAN
THE WORLD'S STANDARD

WILDMAN MANUFACTURING COMPANY
Norristown, Pa.

We have issued a new edition of the complete and informative book, "The Science of Knitting." Price $2.00.

WILDMAN
SPRING NEEDLE BODY MACHINE

Knit Goods—Continued

ing, Pa., bid on woolen stockings only, 22.22c, net. A. G. Benton, Lynchburg, Va., on cotton stockings, 11.3c; on woolen, 23.9c on 300,000 prs, terms ½%, 10 days. Batavia Mills, New York, on woolen stockings only, 21.47c, terms net. Durham Hosiery Mills, Durham, N. C., bidding on cotton stockings, 9.57c on woolen stockings, 21.59c, terms net. J. B. Hirshfeld & Co., New York, bidding on woolen stockings only, 19¼c and 20¼c on two samples submitted with bids, terms net. Union Mfg. Co., Union Point, Ga., bidding on cotton only, 10⅛c terms net. E. B. Sudbury & Co., New York, bid on 120,000 prs., woolen stockings only, 24.75c, terms 1% ten days. A. W. McLellan, New Orleans, bidding on both cotton and woolen, 9.35c on cotton and 22.59c on the woolen, terms net.

* * *

It has been announced that A. W. McLellan, New Orleans, has been awarded contract to supply 200,000 prs. of cotton stockings and Ellis Hosiery Co., Philadelphia, received contract to furnish 930,000 prs. of woolen stockings, both contracts being placed with these firms at their bid prices.

Hosiery Market

(*Continued from page* 55)

servatism in purchasing. The jobber feels he should buy his fancies at a more favorable price than staples because he is obliged to market a surplus from time to time on which bargain prices have to be put and in cases all profit is eliminated. On the other hand, the manufacturer feels he should get more for his merchandise because of the same situation. If he could confine his manufacturing operations to a very few lines and run his mill steadily throughout the season on these lines, his cost would be reduced and the element of waste would not enter so prominently into his calculations.

Increase in Wool Goods

Sellers are emphatic in their statement that demand for wool goods is on the increase. It was stated last week that the market had not progressed far enough to give much indication as to the attitude of buyers, but in a good many instances this indefiniteness has changed and the business so far received would seem to be indicative of substantial orders throughout the season. This is true not only of half hose but of women's hosiery. In the former fancy effects predominate, although solid colors in oxford and ecru as well as black are prominent in the samples displayed. It is believed that in women's goods the wool fancy is destined to occupy a more important place this year than ever.

Chain Store Importance

A great deal has been said about the growing importance of chain stores as related to the distribution of hosiery. The report that on certain lines of hosiery the chain store was receiving the benefit of a lower price than the jobber has been criticised as unfair to the latter, and as uneconomic procedure. Those who justify such a method of merchandising declare it is only natural that the chain store buyer should get the preference. In the first place it is pointed out the chain store buyer places larger individual orders than the average jobber. What is more, these orders are always detailed, which is not the case with the jobber. This fact enables the manufacturer to form a basis on which to operate his plant and also a basis on which to figure his costs. In other words, it is a backlog for him, which has saved him in very many instances from disastrous consequences. Also there is hardly ever any dispute, of an unreasonable character at least, on deliveries nor are there cancellations or returns. Credits are good and altogether the business is "clean." Very few of these conditions obtain in the regular jobbing trade and it is not to be wondered at that the mill should cater to this class of buyer, even though he may be producing a species of competition that is difficult or even impossible for the jobber to meet.

Goodyear Mills in Connecticut Have Unique Five-Year Record

The plant of the Goodyear Cotton Mills, Inc., Killingly, Conn., a subsidiary of the Goodyear Tire & Rubber Co., has for the last five years operated on full schedules both night and day. The company employs 400 and all have been kept busy every hour of time permitted under the industrial working laws of the State. The day force works 55 hours per week and the night force 60 hours per week. At the present time indications are the plant will continue on the same definite schedule for an unlimited time. Materials must be produced to fill orders from the Akron plant.

The employes of the company are well satisfied with conditions and many have received service records of merit attained for their cooperation and attention to the details of their work. Company pins and extra vacations are the prizes offered for faithful work. Particular attention is given by officials to guard against overwork. No employe is permitted to work through a continuous night and day. The theory is advanced despite the willingness of workers, that too much work produces an inferior product and is moreover against the best interest of the employes.

This unique and interesting five-year record of the Goodyear Cotton Mills, it is said, has never been equaled by a concern of comparable products. It is a record that daily is being added to and according to officials can be continued for years longer. All the products go to the Akron plant for the manufacture of tires.

PARAMOUNT
Interchangeable
TOE FORMS
5 SIZES
ON ONE FORM

An advanced type of changeable-toe form incorporating distinctive features of superiority.

Toes are solid throughout, insuring positive heat conductivity. No air pockets or spaces to prevent rapid and uniform heat transfusion to the toe members.

Toes are interchangeable and are fastened to the forms with a positive locking device which eliminates, entirely, faults of looseness and binding common to all friction joints. Unlocking the toes for change is accomplished instantly, and leverage devices for removing toes are not required.

All tearing edges eliminated. A special jointless edge at the toe is absolute protection against thread pulling.

A precise heating arrangement delivers steam directly at the toe and assures proper heat at all times.

The superiority of Paramount Forms for hosiery drying and finishing is proved by the fact that the number of mills using them exceed, by a large percentage, the combined total of mills using all other methods.

See also CONSOLIDATED TEXTILE CATALOG

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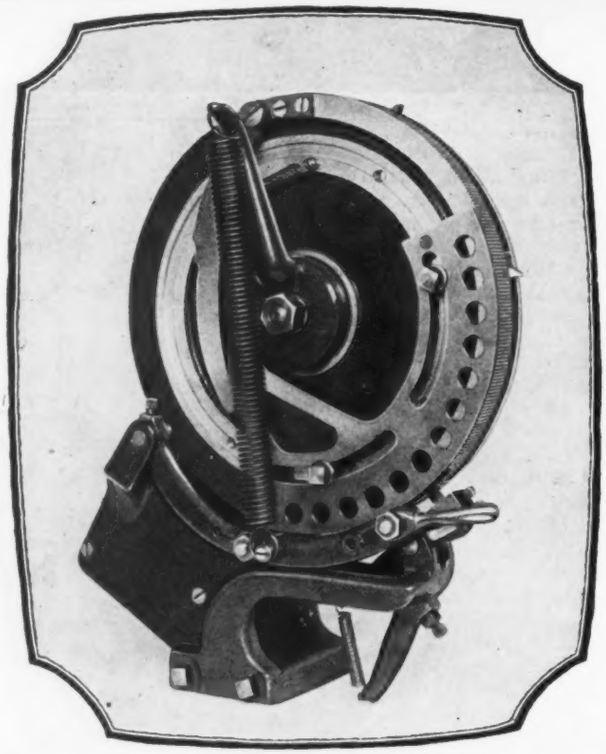


The READING COURSE COUNTER

A tried and proven device, radically different and materially better than any counter now in use.

It is electrically controlled, *entirely automatic*, fool-proof, and accurate to a course.

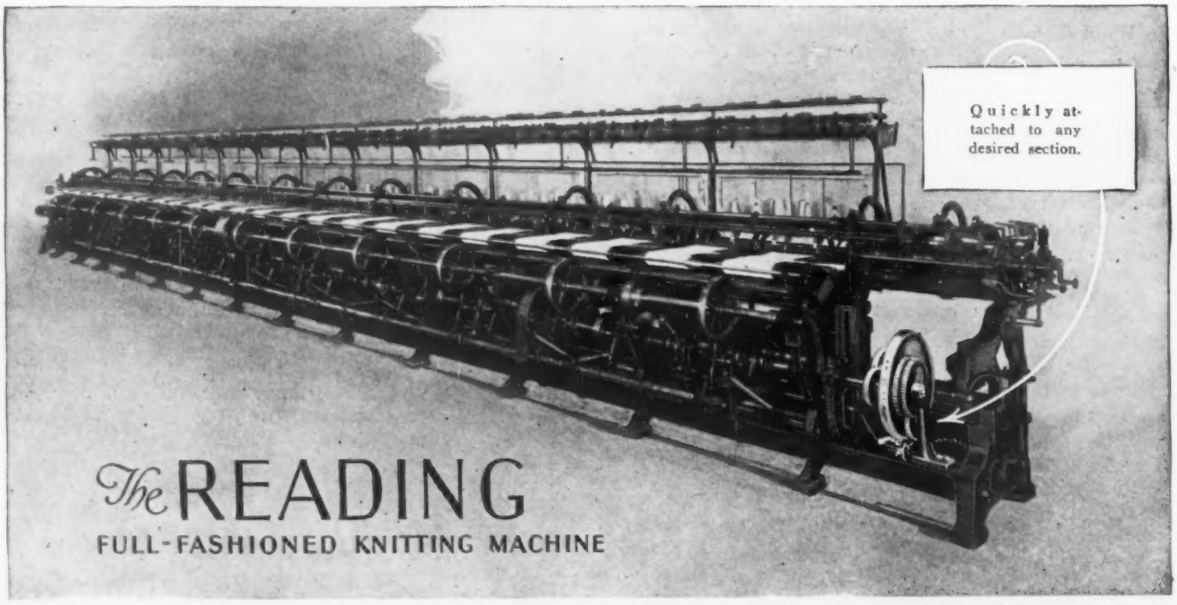
It is inexpensive and easily attached.

Time required to set the course counter for a change of style is negligible.

Adaptable to all full-fashioned knitting machines and standard equipment on all forthcoming "Reading" machines.

Details and price upon request.

TEXTILE MACHINE WORKS, READING, PA.



See also CONSOLIDATED TEXTILE CATALOG

Obituary

Richard Austin Robertson

Richard Austin Robertson, retired manufacturer and one-time head of the Providence Engineering Works, died Friday of last week at his home in Providence, R. I., in his 72nd year. Born in Boston, Dec. 21, 1856, Mr. Robertson was educated in the public schools of that city and the Massachusetts Institute of Technology in Cambridge. Following the completion of his schooling, he was employed by Armington & Sims at Lawrence, Mass., as draftsman in the development of engines for the Edison Isolated Electric Co. of New York. He became affiliated with the Builders Iron Foundry where, during a 20-year period he served as agent, treasurer and general manager. Associated with Richard H. Rice, John W. Sargent and Z. Chaffee, he organzed the Rice & Sargent Engine Co. in 1896. This company was merged with the Providence Steam Engine Co. and both were reorganized as the Providence Engineering Co. This business was carried on until 1916, when, upon the completion of contracts with the United States and British Governments for projectiles, the plant was sold and Mr. Robertson retired from active business.

Arthur E. Cramer

Arthur E. Cramer, 68 years old, president and founder of the Cramer & King Co., Paterson, N. J., and a leading silk printer, died at his home in that city after a long illness. He was born in Basel, Switzerland in 1849 and received his education in the public schools and college there. As a young man he came to the United States, going to Cheney Bros., as a designer. Then he went successively with John D. Cutler, for three years; S. H. Green & Son, Providence, R. I., one year, and 5 years as superintendent at Middletown, N. Y. In 1895, with Henry B. King, and Omer Cramer, he commenced a silk printing business in Paterson. The venture prospered, was incorporated in 1901, under the name of Cramer & King Co. Mr. Cramer was regarded as one of the leading authorities in the United States on dyeing, printing, bleaching and finishing silk and cotton goods. Surviving him are his widow and one daughter, who is the wife of Dr. Alfred Hoffman, a Brooklyn chemist.

Charles M. Connolly

Charles M. Connolly, manager of the advertising department of Cluett, Peabody & Co., Troy, N. Y., died last week at his home in that city. He was also a director of the firm and had a record of over 30 years of service. His unusual ability as an advertising specialist had gained him nation-wide prominence. He was prominently identified with the civic and fraternal life of that city.

George W. Walker

George W. Walker, district manager for the Cooper-Hewitt Electric Co., at Charlotte, N. C., died recently.

Joseph Neal Damon

Joseph Neal Damon, president of the Union Carpet Lining Co., Watertown, Mass., died Jan. 21 at his home, 98 Washington Street, Newton, following a protracted illness. Mr. Damon was 72 years old and had previously been connected with the varnish industry. He was born in Charlestown but had been a resident of Newton for the last 40 years. His widow, two daughters and a son, survive.

Joseph Johnson Greer

Joseph J. Greer, president Joseph Greer, Inc., Philadelphia, one of the leading worsted goods manufacturers in this vicinity, died Jan. 20, at his home, having been in poor health for some time. Mr. Greer was 45 years old and had been connected with the concern of which he was the head for more than 25 years, becoming associated with it shortly after graduation from college. Mr. Greer was born in Philadelphia and was a graduate of the Episcopal Academy, class of 1900. Through his long connection with the business, founded by his father, he became widely known as a successful manufacturer and enjoyed a wide friendship in the trade. He is survived by his widow, Pauline Rudolph Greer, and two sisters. Funeral services were held Jan. 21, from his home 429 E. Mt. Pleasant Ave., Mt. Airy, Philadelphia.

Roy Dallis

Roy Dallis, textile engineer with the Callaway Mills, LaGrange, Ga., died at his residence Thursday morning, Jan. 18, following an illness of ten days with pneumonia. Mr. Dallis, who was 55 years old, had been prominently identified with the Callaway Mills ever since their organization 25 years ago. He was graduated from the University of Georgia in 1892, and came to LaGrange in 1902 when he was supervising engineer in charge of installing the local water works and sewerage system. Shortly after that he became connected with the Callaway Mills and remained with them, in several executive capacities, until the time of his death. For several years he had served on the city council, and had just been reelected to that body before his death. He had once served as mayor pro tem of LaGrange. He was a member of the Phi Delta Theta fraternity and of a number of other organizations. The funeral services were held from the residence.

Archibald Mitchell

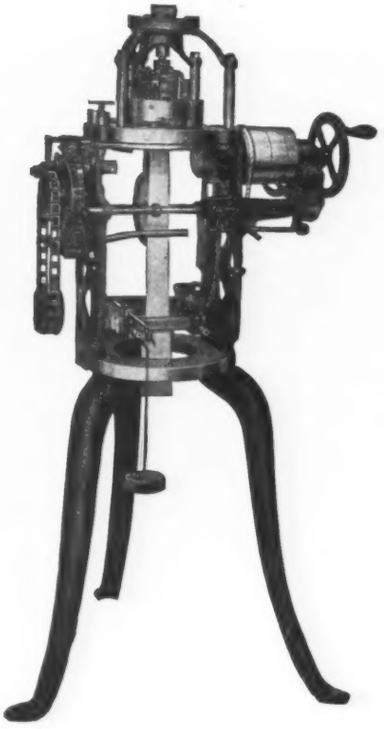
Archibald Mitchell, formerly head of the carpenter department of the Renfrew Mfg. Co., Adams, Mass., where he was employed for 40 years, is dead at his home, 158 Columbia street, Adams, following an illness of two years. Mr. Mitchell was born in Scotland 70 years ago and is survived by his widow, one son and three daughters. He was a member of I. O. O. F. for 42 years, the Foresters and the Caledonian Club. In November, when the Renfrew tenements were auctioned, Mr. Mitchell purchased his home.

Joseph Donais

Joseph Donais, for the last 14 years an overseer for the Stevens Linen Works, Webster, Mass., died in Louis Pasteur Hospital, Worcester, Mass., on Jan. 22, after a long illness. He was 47 years old, a native of Danielson, Conn., and had lived in Dudley, Mass., for 40 years. He leaves a widow and three daughters.

Sidney J. Yancey

Sidney J. Yancey, master mechanic of the Bibb Mfg. Co., Porterdale, Ga., died at his home there suddenly Friday of last week. He was 56 years of age and one of the leading citizens of the community.



In all of the great knitting centers of the world, you will find Brinton machines in the mills of wise manufacturers who demand the utmost in performance.

We will be glad to furnish information of our complete line.

H. BRINTON COMPANY
3700 Kensington Avenue Philadelphia

CIRCULAR BRINTON KNITTING MACHINES

FOREIGN AGENTS

Great Britain and the Continent: Wildt & Co., Ltd., Leicester, England.

South America: Santiago Scotto, 15 de Novumbre, 1899, Esq. Pozas, Buenos Aires, Argentine Republic.

Australia: J. H. Butter & Co., Sydney, Melbourne.

China and Japan: Elbrook, Inc., 50 Peking Road, Shanghai, China.

Smoothness that lasts

THE SMOOTHNESS of Celanese brand yarn is a natural characteristic and lasts as long as the yarn itself. Garments made of Celanese brand fabrics retain their delightful softness and satiny finish indefinitely without growing rough or fuzzy.

Washing improves the lovely appearance of Celanese. In the wet condition it requires no special handling. It dries with exceptional rapidity; mildew will not form upon it.

Celanese in its natural state is a snowy white, which will not turn yellow. The dye-stuffs used for it produce colorings that are of excellent fastness to sun, suds, salt-water, perspiration, and uric acid.

Celanese brand yarn lowers your production costs and increases your production speed. Let us send you full information.

CELANESE
REG. U.S. BRAND PAT. OFF.
YARNS

CELANESE CORPORATION OF AMERICA
(Formerly American Cellulose & Chemical Mfg. Co. Ltd.)
15 EAST 26TH STREET, NEW YORK
WORKS AT AMCELLE (NEAR CUMBERLAND) MARYLAND

CELANESE is the registered trademark, in the United States, of the Celanese Corporation of America, to designate its brand of yarns, fabrics, garments, etc.

FABRICS

Cotton Goods Disappointing

January Sales Far Below Last Year's— Blame Placed on Unstable Raw Cotton

WITH the month of January coming to an end, factors in the cotton goods market can not help but compare the results of the month's trading with the similar period a year ago. Last January saw a record business being done, while the month just coming to a close has witnessed very little activity in comparison. This is accounted for largely by conditions in the raw cotton market which are just reversed from what they were last year. At that time cotton had started the year at a very low figure and rose steadily during the month, while this year began with cotton at a fairly high level and prices have been weakening during the last four weeks. In the first case conditions were such as to stimulate buying while in the second instance the raw material influence was of a retarding nature. Selling agents feel that there is a good amount of business to be placed but with nothing to stimulate the placing of future commitments buyers are apparently in no hurry to operate beyond filling their immediate requirements.

Wholesalers have been in the market following their organization meetings at the Waldorf Astoria Hotel and while they have placed orders to some extent, mill agents say that the total volume of business has not come up to expectations. Some of the jobbers are reported to have more stocks on hand than sellers had estimated and many others are moving cautiously, finding nothing to hurry them, so that the business placed is well under last year.

The gray goods market continued quiet and without feature except for an awakening of interest on the part of converters. This interest was more or less in the form of inquiry but was taken to mean that converter's stocks were low and that they would soon be active in covering their needs. Lack of activity in gray goods is a disappointment to selling agents who had expected a return to the brisk buying of the latter part of December.

The Census Bureau report on ginnings issued early this week showing a total of 12,501,845 bales ginned up to Jan. 16, was more than had been expected and caused cotton to drop. This undoubtedly kept buyers away from the goods market even though mills pointed to greater progress in their curtailment programs as an assurance of price stability. Apparently nothing will satisfy buyers except stabilization of prices.

* * *

Print Cloths: The demand for print cloths has been light during the week due to a large extent to the drop of raw cotton prices following the ginning report. Selling agents have been endeavoring to hold prices firm, but reports from some quarters show that slight concessions were made on some constructions in order to meet low bids from buyers. Curtailment is going a long way toward keeping prices up but buyers apparently lack confidence in prices not supported by a stable raw cotton market. Small sales of 64 x 60s were reported made at 7⅞c for early delivery; 60 x 48s brought 6 9/16c, while a few sales of 80-squares were put through at 10⅝c.

* * *

Sheetings: Business continued inactive in sheetings during the week except for some slight interest on the part of the bag trade. Sales of small lots of 37-in., 4-yd. were made at 8c, 36-in., 5.00 yd. at 7¼c, 40-in., 2.85 yd. at 11⅜c, 31-in., 5.00 yd. at 6⅝c, 40-in., 3.60 yd. at 10⅛.

* * *

Ginghams: Reports show that some fair sized orders have been placed for ginghams by jobbers, mail order houses and chain stores. Prices remain firm but are not considered satisfactory as present quotations are too low in relation to the raw material.

* * *

Chambray: A fair interest continued during the week in chambrays by work shirt manufacturers. Orders are mostly for immediate or early delivery.

* * *

Denims: The demand for denims is reported to be lagging somewhat at present, with only moderate interest being shown by overall manufacturers. However, many sizable orders were placed when these lines were repriced a few weeks ago.

Cotton Goods Quotations

	Jan. 25	Jan. 18	Jan. 26, 1927
Spot cotton, N. Y....	18.55¢	19.25¢	13.50¢
Print Cloths			
27- in., 64x60, 7.60..	5¼-6¼¢	5½-6⅝¢	4⅝-5¢
38½-in., 64x60, 5.35..	7¾-8¢	7⅞-8⅛¢	6⅞-7¼¢
39- in., 68x72, 4.75..	8⅛-8¾¢	8¾-8⅞¢	7¾-7⅞¢
39- in., 72x76, 4.25..	10¢	10¢	8¾-8⅞¢
39- in., 80x80, 4.00..	10½-10⅝¢	10⅝-10⅞¢	9½-9⅝¢
Brown Sheetings			
36- in., 56x60, 4.00..	9⅝¢	9½-9⅝¢	7⅞-8¢
36- in., 48x48, 3.00..	11-11¼¢	11⅛-11¼¢	9-9¼¢
37- in., 48x48, 4.00..	8¢	8⅛-8¼¢	7⅛-7¼¢
Pajama Checks			
36½-in., 72x80, 4.70..	9⅛¢	9¼-9⅜¢	7⅜¢
36½-in., 64x70, 5.75..	7⅜¢	7½-7⅝¢	6⅜¢
Miscellaneous			
Drills, 37-in., yd.....	11½¢	11¾¢	9¾¢
Denims, 2.20s.....	13¢	13¢	14¢
Tickings, 8 oz.	22½-24¢	22½-24¢	17½-19¢
Standard prints.....	8¾¢	8¾¢	8¢
Eastern staple ginghams, 27-in.....	10½¢	10⅜¢	9¢

Weather Retards Wool Goods

Clearance Sales Not Moving Retailers' Stocks as Well as Had Been Expected

THE weather still remains the butt of many unpleasant remarks in the wool goods market after another week of quiet business. Retailers find that their fall and winter stocks are still with them in fair volume regardless of the fact that clearance sales have been in effect on all these heavyweight lines for several weeks. The mild weather broken only by short occasional cold snaps is blamed for the lack of interest shown in sale merchandise which drastic reductions have made very attractive. The situation is reported to be particularly bad in regard to overcoats which continue to move slowly regardless of the excellent values now being offered at sacrifice prices. It appears at present as though considerable stock would be carried over until next year.

While the retailer is endeavoring to turn his heavyweight stocks into capital, the clothing manufacturer does not find him in any mood to place volume business in anticipating his requirements for spring. In turn the mill agents find reorders coming to them in a slow, irregular manner and for only small quantities of cloth. If clothiers could only get more encouragement from retailers, the situation should improve easily and rapidly. Selling agents look for marked improvement in February when clearance sales will have progressed further and the retailer will be thinking seriously of covering his needs for the approaching Easter trade.

The price situation is undoubtedly holding the center of interest among market factors at the present time. During the last week several mill agencies followed the lead of others in announcing advances on spring suitings and topcoatings of from 2½c to 10c per yard. This was quite in line with the general movement toward meeting the advancing raw wool market and last week one house announced advances of 25c and 30c on three topcoating lines, but several houses which have been showing the cheaper grade overcoatings for 1928 and one house which opened a better grade line is quoting prices which are about on a level with those of a year ago. Such a policy seems quite inconsistent as it was generally understood that all 1928 heavyweight lines would show appreciable advances even though many houses did not see fit to increase the prices on their spring lines.

These mills may have a carryover of raw material purchased at lower prices than those prevailing at present. Selling agents discount this reason and believe that the mills are badly in need of business in view of the disastrous overcoating season just passed, and are willing to make price concessions in an effort to stimulate business to keep their looms busy. It is also pointed out that while the price may not show any advance over last year, it is quite possible that the same value is not in the cloth, in other words a greater percentage of substitutes may be used in its manufacture.

While decreasing the quality of the fabric in this manner may be practiced in the cheaper grade coatings, it is hardly possible that the better grade goods would be treated in this manner and it is expected that when the leading lines are opened they will show advances over last year in keeping with the higher raw wool situation.

* * *

1928 Openings: There have been no definite announcements made to date as to when the leading lines of 1928 heavyweights will be opened. Selling agents are apparently profiting by mistakes made in the past of opening their new lines too early and due to the unsatisfactory conditions prevalent in clothing centers they are pursuing a waiting policy. It is expected that overcoatings and staple suitings will be opened by the middle of February but semi-staple and fancy suitings will probably be held back until early in March. Selling offices report that buyers are anxious to see the new lines but it is their intention not to show buyers their new ideas until they are reasonably sure some business will be placed for the new season. Buyers are always looking for something new and sellers do not wish their new ideas to be used to sweeten up clothiers' lines for late spring.

* * *

Men's Wear: Aside from the price situation and the preparation of the fall-winter heavyweight lines, the men's wear market is without feature. Reports from some quarters persist that there is a better feeling around the market as buyers become reconciled to paying higher prices for spring goods. Reorders for spring goods are said to be coming to hand slowly and for small quantities as clothiers are working close and only cover their immediate needs.

* * *

Women's Wear: The women's wear market appears to be gaining momen-

ADVANTAGES OF HERCULES STEAM-DISTILLED PINE OIL

HERCULES Steam-distilled Pine Oil is an excellent solvent for gums and waxes found in raw fabrics. Its solvent and penetrating properties have been found of great assistance in the bleaching industry.

By means of chemical control Hercules Steam-distilled Pine Oil is made to rigid specifications. We are in a position to supply the textile industry with pine oil of high quality for prompt shipment.

HERCULES POWDER COMPANY
(INCORPORATED)
973 Market Street
Wilmington **Delaware**

Plant of Jacques Wolf and Co., Passaic, N. J.

WOLFCO SCOUR

A scouring product more economical than soap with maximum detergent qualities.

WOLFCO SCOUR boils up quickly into a liquid soap, lathering freely and abundantly, and washing out easily.

WOLFCO SCOUR penetrates instantly and thoroughly even the heaviest material, resulting in quicker fulling action.

WOLFCO SCOUR facilitates napping and leaves the goods with a fuller nap and higher lustre.

WOLFCO SCOUR

Prevents crocking;
Prevents resist spots;
Prevents cloudiness and
Prevents streakiness in piece dyeing.

WOLFCO SCOUR

Gives a better hand;
Brings colors up brighter;
Gives colors more life;
Assures even dyeing.

JACQUES WOLF & CO.

MANUFACTURING CHEMISTS AND IMPORTERS
PASSAIC, N. J.

Pacific and Mid-West Representatives
THE CIBA CO., INC.
San Francisco, Cal. Chicago, Ill.

Fabrics—Continued

tum slowly and it is expected that February will see some good activity as garment manufacturers prepare for the Easter trade. Fancies are reported to be picking up and as expected earlier in the season a good business is developing in this class of goods. For dressy garments broadcloths are in great demand and kasha cloths are reported to be receiving increasing calls from clothiers at the present time.

Prices on Silks Improve

General Run of Staples with One or Two Exceptions Is Higher

SINCE the first of the current month there has come an improvement in the prices for the general run of staple crepes. Over the first half of the month this betterment was tentative and its importance was minimized to some extent by continued underselling on the part of certain houses that evidently did not believe that the advance in raw silk was to be permanent. Gradually there has been noted a growing realization that the low prices of December for raw will not be duplicated for several months at the least calculation and possibly much longer. Both buyers and sellers now appear to tacitly admit this fact.

In some quarters there is an attempt to deprecate the improvement that has come over the market in the last six weeks. Certain houses state that compared with a year ago business has not shown the expected jump. Others, however, admit that a vast change has come over the whole market and that the points of weakness are almost overcome. Stocks of goods are still large, but the frenzied efforts to get from under are strikingly absent.

* * *

Crepe-de-chine: Prices much firmer both in gray goods and finished. Weighted goods appear to have the call over the pure dye but the latter are doing well particularly the washable numbers suitable for sales during the current month in stores.

* * *

Georgette: Sales large due to increase in use in the cutting-up trade. Latter are taking all the merchandise that manufacturers can turn out. The 90 x 88 and 90 x 80 are still the favored constructions.

* * *

Radium: Still quiet, but stocks of goods are not large all things considered. Prices are still too low for any profit, which is curtailing the production.

* * *

Prints: Very good and in strong position due to difficulty in getting adequate quantities through.

* * *

Silk Situation at a Glance: PRODUCTION: Increasing, expect raw silk deliveries to be over 50,000 in January.
DEMAND: Improved.
STOCKS: Still large.
RAW SILK: Prices steady; Stocks unchanged.
SENTIMENT: Improved, holders firmer in prices.

Burlaps Quiet

Prices Are Firmer, but Buyers Hold Off

The burlap market continued inactive during the week with sales being restricted to small quantities for immediate delivery. Buyers are still reported to be looking for goods at much lower prices than sellers are quoting at the present time. Buyers are apparently well covered on their present requirements and are willing to wait in anticipation of obtaining price concessions.

On the strength of Calcutta cables showing a slightly firmer condition in the primary market, prices here advanced a few points on spots and afloats.

Early in the week 10½ oz. 40s on the spot were quoted at 9.30c; nearby afloats at 9.70c to 9.75c, and early shipments from Calcutta, 9.30c. Spot 8 oz. 40s were held at 7.70c, nearby goods at 7.70c, and early shipments at 7.30c.

Pacific to Add Lines of Novelty Curtain Materials

Pacific Mills this week announced that John A. Collins has entered the Pacific organization in the cotton goods division of the Drapery Department under A. M. Shannon. Mr. Collins will be in charge of the development of an entirely new line of scrims, marquisettes and voiles which will be given a place in the Pacific drapery lines to meet the trend for novelty curtains.

Mr. Collins has had many years experience in the handling of curtain materials. Previous to his present connection he was department manager in his present line with Manville-Jenks Co., New York. He entered the business with the Bromley Mfg. Co. of Philadelphia, manufacturers of lace curtains, and later was with Elms & Sellon, New York, in charge of scrims, marquisettes and voiles. Later on Mr. Collins was with the American Bleach Goods Co. in a similar capacity.

Gloversville (N. Y.) Knitting Co. is again running with night shift in addition to full time day schedules.

FACTORS!

Our factoring service relieves the manufacturer of many details so that he may devote his time, energy and attention to his own specialty,—the production of goods.

In addition to this, we are in a position to offer him well equipped and efficient selling organizations to market his product.

Our method of financing enables the manufacturer to increase his production and sales without adding to his capital investment.

We shall be pleased to send our representative to furnish you with details.

FLEITMANN & CO., INC.
Factors and Commission Merchants
356 Fourth Ave., New York City
Established 1850.

"Better than Natural Daylight!"

Macbeth Lamps sold 10 years ago are giving the same profitable service as when they were first installed. A clear glass Mazda C bulb supplies the light. The metal housing is copper. Adapted to any electric service on which an incandescent lamp can be used. A guarantee with every lamp.

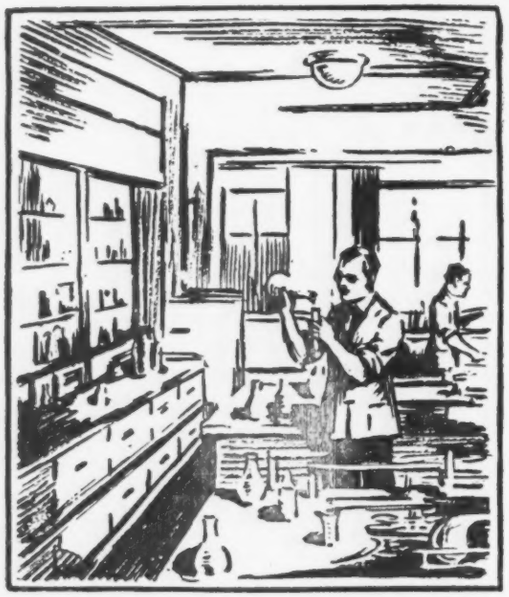
Just as a clear day in June is better than a cloudy day in January.

Match your colors scientifically—under the light of a Macbeth Lamp. This "selected daylight" never changes. You can depend upon the same color identifications and comparisons every day of the year—and that's more than natural light can do!

The reorders for this color identification lamp prove its worth in hundreds of textile mills and dye houses. Through its exactness, it prevents comebacks due to unsatisfactory color selection. As one mill man said, "Our dyer uses your lamp in preference to going to the window for daylight." Further data gladly. ***Write.***

Macbeth Daylighting Co., Inc.
237 West 17th St., New York

MACBETH "SELECTED DAYLIGHT"



The Triumph

of Palmolive Laboratories . . a new product that has won the silk industry

DEGUMMING and dyeing have presented many problems. And improper methods have resulted in costly mistakes, in ruined batches.

Now, as the most practical form of "silk insurance" Palmolive Laboratories offer you a new product, tested and proved, that will reduce the time and cost element in your processes.

It is called Texolive Kwiksolv, triumph of 65 years of soap study in our laboratories. It will harm nothing that water itself won't harm.

Texolive Kwiksolv is a low titre (22°) olive oil soap that is instantly soluble in water. There is practically no danger of skeins breaking—of adhesions—when Texolive Kwiksolv is used. It removes the waxy serecin in the soak so that there will be no trouble when the dyeing process is started.

Emulsifies at Low Temperatures

Even in low temperature water Texolive Kwiksolv emulsifies the oil as completely as possible, speeding up work and giving more satisfactory results.

Texolive Kwiksolv is composed of the purest olive oil base, made for a specific need. It contains no deterious substance that will be absorbed by the fibre or that will cause deterioration.

In other words, Texolive Kwiksolv is your best form of silk insurance. You are paying a high premium if you do not use it.

Send for trial barrel

Let your experts test it. They'll agree that our statements are based on fact. Order now—we feel sure you'll place a standing order thereafter.

THE PALMOLIVE-PEET COMPANY

360 No. Michigan Ave., Chicago, Ill.

Makers of Texolive Kwiksolv, Badger Flakes and Kwiksolv, Pearl Chips and Granulated, Crystal Neutral and Granulated.

BERKELEY KANSAS CITY MILWAUKEE

(3750)

"Distinguished for its high test and uniform quality—"

SODA ASH

WYANDOTTE Light 58% Soda Ash has always met the exacting requirements of the Textile chemist.

CAUSTIC SODA

High test 76% has been developed to meet the requirements of operations necessitating special qualities such as—

RAYON — MERCERIZING
BLEACHING — FINISHING

WYANDOTTE operates its own limestone quarries, salt wells, coal mines, steamship lines, cooperage, foundries and warehouses.

Control of the source of raw materials guarantees--uninterrupted deliveries.

Michigan Alkali Co.

General Sales Department

21 East 40th Street, New York

Chicago Office, 1316 South Canal Street

FINANCIAL

New England Textile Stocks

(Quotations at "Public Sale" are based upon last sales at Boston public auction and Boston Stock Exchange. Bid and Asked prices are latest quotations of leading Boston dealers.)

	Public Sale	Bid	Asked
Am. Wood pfd.	53¼	...	...
Am. Mfg. pfd.	82	80	83
Amoskeag, new	22	...	...
Androscoggin	37	33	40
Arlington	44	44	48
Bates	108	106	110
Berkshire Cot.	129	124	130
Bigelow-Htfd. com.	96	...	...
Boott	...	110	...
Edwards	70	70	...
Esmond, pfd.	100½	100	...
Farr Alpaca	154½	155	165
Great Falls	6¼	6	9
Hamilton Woolen	21¾	22	...
Hill	6	7	12
Ipswich, pfd.	15¼	10	15
Ipswich, com.	90c	2	5
Lawrence	67¾	67	69
Ludlow Assn.	180¾	182	184
Lyman	80¼	80	...
Merrimack, com.	153	140	150
Nashua, com.	58¼	58	60
Nashua, pfd.	95	96	99
Naumkeag	172½	175	180
N. E. So. pfd.	4	...	...
Otis	31¼	30	40
Pacific	39	...	...
Pepperell	104½	105	106
Plymouth Cordage	95	95	97
York	21⅝	20	23

Silk Stocks on N. Y. Exchange

(Week ending Jan. 24)

1928 High	Low	Stock	Sales	High	Low	Last
27¼	15½	Belding Heminway	12,400	20½	18½	19⅝
16½	10¼	Century Ribbon	200	12	12	12
65¾	49	Julius Kayser	21,200	66¾	64¼	65¼
20⅜	11½	H. R. Mallinson	1,600	17	16	17
14⅜	5¾	Van Raalte	100	9	9	9

Rayon Stocks on N. Y. Curb

(Week ending Jan. 24)

Stock	Sales	High	Low	Last
Celanese Corp.	2,500	99	94	97½
Courtaulds, Ltd.	800	38¾	38	38
Industrial Rayon	21,700	22¼	19½	21
Tubize Art Silk	375	495	465½	481

Dividends Declared

Mill	Pd.	Rate	Stock	Payable	To stock of
Continental	SA	$2	Com.	Feb. 1	Jan. 18
Munsing wear, Inc.	Q	75c	Com.	Mar. 1	Feb. 16
Bates Mfg.	SA	$4	Com.	Feb. 1	Jan. 24

Outside Interest in Textile Stocks

Demand and Values well Maintained—American Woolen Files Answer to Wood Suit

BOSTON, Jan. 25.

OUTSIDE interest in high-grade textile shares has been well maintained and reactions in other classes of industrial securities have not affected the values of the majority of textile stocks materially. Such speculative textiles as the American Woolen and Amoskeag issues lost most of the gains scored earlier in the week, but such listed shares as Pacific and Bigelow-Hartford held recent gains. Regular investors in textiles have been rendered somewhat timid temporarily by the drastic curtailment program now in progress and the slow development of new business. On the other hand, they appear to give little consideration to the wage cut of 10% that is now becoming general, and the substantial decline in cotton prices that places the mills in an advantageous position to cover their needs during the balance of the season.

Some Recent Transactions

At today's auctions the only notable changes were a decline of 2¾ points in Naumkeag to 172½, although privately it has been quoted at 177 bid and 180 asked. A sale of Arlington today at 44, while a decline of 1 point from the last public sale, is close to the recent full market price which has been quoted by some brokers as 43½ bid and 45 asked. The decline of 19 points in Farr Alpaca to 154½ is explainable only on the score of slack demand, for there has been no report of any falling off in this company's business. An advance of 8¼ points in Merrimack Hat to 69 was the only other notable sale at today's auctions.

On the local exchange American Woolen preferred at today's closing of 53¼ shows a net advance for the week of ¼ point, but a decline from the week's high of 3½ points; the common sold during the week as high as 23¾ and at today's closing of 22½ is off ⅜ point. Amoskeag common sold during the week within a range of 22½ to 21¼, and closed today at 22, while the preferred is unchanged at 92. There has been a steady demand for Pacific within a range of 38½ to 39⅛, and at the closing price of 39 today is up ¼ point for the week. Bigelow-Hartford common is unchanged at 96, but has sold during the week as low as 94. The preferred at 101 is unchanged. There has been a moderate demand during the week for Amoskeag 6s within a range of 94½ to 94, the debentures closing today at the latter figure.

American Woolen Sues Wood

The answer of the American Woolen Co. to the $5,000,000 suit brought against it by the estate of the late William M. Wood, former president of the company, was made available for publication when the Suffolk County Superior Court denied a motion last week to impound it, and the averments contained therein, claim among other things, that Mr. Wood, while president of the company, did things for personal selfish interest, violated his duty of fidelity to the company and caused losses of $2,500,000 to the company by a series of fraudulent acts. The answer to the suit declares that in the years 1918 to 1924, inclusive, the American Woolen Co. and its subsidiary, the American Woolen Co. of New York, paid the late William M. Wood as president, compensation in the sum of $5,041,465, paid his income taxes for him to a total of $2,824,378, or a grand total of $7,865,844. The answer asks the court to dismiss the suit. A bill in equity was brought in the Supreme Court at about the time of the filing of this answer by the American Woolen Co. against the Wood estate, and although this bill was impounded, it is rumored that it seeks to recover the losses that the answer in the $5,000,000 suit avers that Wood caused the company.

The Wood estate in its suit is seeking to compel the American Woolen Co. to keep on paying its income taxes as the State and Federal Government assess them, until they are all reduced to a fraction of a cent for the several years involved. The taxes are assessed each year on the theory that what the estate each year has saved from paying by the American Woolen Co. is income of the Wood estate. The complainant estimates that these taxes will amount to $2,000,000 and that interest will amount to approximately the same.

An abstract of the other averments contained in the answer by the American Woolen Co. was compiled by the Boston News Bureau as follows:

The answer sets forth the several

MILL STATEMENTS

Name and address of company	Line of business	Fiscal year	Assets: Cash and debts receivable	Raw materials, mdse., etc.	Total quick assets	Real estate, buildings and machinery	Miscellaneous: Amount	Miscellaneous: Description	Total	Liabilities: Accounts payable, floating and funded debt	Capital stock	Surplus, profit and loss, etc.
National Spun Silk Co., New Bedford, Mass.	Silk	Sept. 30, 1927	$587,035	$4,874,067	$5,462,002	.....	[1] $5,922,088	Miscellaneous	$11,384,090	$10,284,090	$1,000,000	.....
		Sept. 30, 1926	479,354	5,486,773	5,966,127	.....	[2] 3,316,820	Miscellaneous	9,282,947	8,282,947	1,000,000	.....
Parker Mills, Fall River, Mass.	Cotton	Oct. 1, 1927	418,188	1,443,501	1,861,689	$3,827,812	.....	.....	5,689,501	2,022,004	1,955,200	$1,702,297
		Oct. 1, 1926	321,463	1,328,022	1,649,485	3,708,011	.....	.....	5,357,496	1,878,715	1,949,100	1,329,681
Naumkeag Steam Cotton, Salem, Mass.	Cotton	Nov. 30, 1927	2,414,760	2,829,282	5,244,142	8,618,617	129,228	Miscellaneous	13,991,987	299,712	6,000,000	7,692,275
		Nov. 30, 1926	2,041,106	1,891,576	3,932,682	8,408,870	143,027	Miscellaneous	12,484,579	363,610	6,000,000	6,120,969
Plymouth Cordage Co., Plymouth, Mass.	Jute	July 31, 1927	2,293,678	8,251,474	10,475,152	6,800,264	781,766	Miscellaneous	18,057,222	1,746,186	8,108,170	8,202,866
		July 31, 1926	3,069,368	9,976,467	13,045,775	6,923,913	727,881	Miscellaneous	20,697,569	3,919,203	8,103,180	8,675,186
West Boylston Mfg. Co., Easthampton, Mass.	Cotton	July 31, 1927	978,667	1,373,969	2,352,516	4,056,373	560,000	Miscellaneous	6,968,889	207,991	[3] 6,760,898	.....
		July 31, 1926	811,763	3,191,475	4,003,238	4,180,656	500,000	Miscellaneous	8,683,894	1,140,175	7,499,600	44,119
West Point Mfg. Co., West Point, Ga.	Cotton	Oct. 31, 1927	2,460,422	5,789,373	8,279,795	16,783,666	699,252	Miscellaneous	25,762,113	3,368,037	7,200,000	15,193,176
		Oct. 31, 1926	3,084,807	3,346,126	6,431,023	16,067,639	714,668	Miscellaneous	23,213,330	2,355,966	7,200,000	13,657,364
Hamilton Woolen Co., Globe Village, Mass.	Wool	Nov. 30, 1927	1,210,318	748,828	1,959,146	3,620,708	54,278	Miscellaneous	5,644,222	1,001,946	2,585,000	2,057,276
		Nov. 30, 1926	1,255,988	1,986,074	3,242,062	3,622,042	90,319	Miscellaneous	6,954,423	2,129,657	2,585,000	2,239,766
York Mfg. Co., Saco, Maine	Cotton	Mar. 31, 1927	701,176	1,521,733	2,222,909	2,676,907	121,175	Miscellaneous	5,000,991	906,647	3,600,000	494,344
		Mar. 31, 1926	818,727	2,539,985	3,358,712	2,745,079	9,100	Miscellaneous	6,112,891	1,153,127	3,600,000	1,359,764
Bigelow-Hartford Carpet Co., Thompsonville, Conn.	Wool	June 30, 1927	.....	.....	11,776,855	11,144,870	181,620	Miscellaneous	23,103,345	721,631	20,787,982	1,623,731
		June 30, 1926	.....	.....	11,151,142	10,955,648	161,930	Miscellaneous	22,268,720	207,716	20,473,444	1,587,559
Bates Mfg. Co., Lewiston, Maine	Cotton	June 30, 1927	2,098,320	1,938,580	4,036,900	6,155,348	93,126	Miscellaneous	10,285,374	48,687	2,700,000	7,536,687
		June 30, 1926	1,759,860	2,613,200	4,373,060	5,993,051	97,858	Miscellaneous	10,463,969	20,823	2,700,000	7,743,146
American Thread Co., Fall River, Mass.	Cotton	Mar. 31, 1927	3,142,578	7,599,923	10,742,501	11,133,805	3,551,073	Miscellaneous	25,427,379	7,216,580	15,690,475	2,520,324
		Mar. 31, 1926	3,196,409	11,022,037	14,218,446	20,098,741	3,672,115	Miscellaneous	37,989,302	11,158,233	15,690,475	11,140,594

[1] Includes profit and loss item of $2,949,995. [2] Includes profit and loss item of $2,198,279. [3] Includes surplus.

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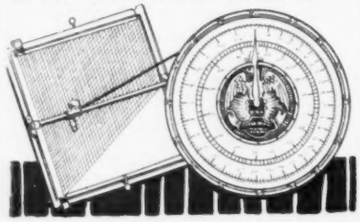

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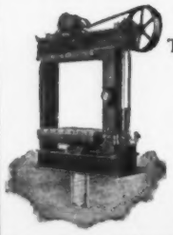

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Financial—Continued

votes of the directors of the company in regard to Wood's compensation and the payment of his taxes. It states that on Feb. 16, 1916, the board voted that the president's annual compensation be fixed at ⅓ of 1 per cent of the gross annual sales of all the mills then or thereafter operated by the company including mills in which the company owned or might own a majority of capital stock or other share capital.

On Aug. 3, 1916, the answer states, directors voted to pay the income taxes, State and Federal, thereafter due and payable on the salaries of all the officers of the company out of the treasury.

As to these two votes the answer avers they were not in effect throughout the entire period after the date of the records till the date of the death of Wood.

On March 25, 1918, the board voted the method of computing the taxes and the answer alleges that the late William M. Wood presided at that meeting and voted in favor of the measure. The answer avers this vote did not amend the previous vote.

On May 3, 1922, the answer says the board voted that the annual compensation of the president for services be fixed Jan. 1, 1922, at an amount equal to one-half of one per cent of gross annual sales of all the mills of the company then or thereafter to be owned by it, "and that said compensation be tax exempt to him both as to State and Federal taxes."

The answer avers this vote rescinded and superseded the previous three votes, and if they were of valid effectiveness, they were released and discharged by this vote.

If the notes on which the plaintiff's estate relies were of the meaning and construction the plaintiffs contend, the answer declares the annual compensation of Wood was grossly excessive and in amount far beyond the value of the services rendered and that the votes were therefore ineffective and in excess of authority of the board of directors, who were empowered to vote reasonable compensation and no more and that the plaintiffs cannot recover on these votes because such agreements so construed would be unconscionable, unjust and inequitable to the defendant and their enforcement against public policy.

"Unconscionable Contract"

Also, if anything would have been due, the answer avers the plaintiffs cannot recover "by reason of the fact that the plaintiffs' estate while under the strictest obligations as treasurer, president, director and employe of the defendant to devote his entire energies solely and exclusively to the defendant's service and to refrain from acts tending to promote his personal and individual interest, in truth and fact throughout the performance of such service as treasurer, president, director and employe continually and repeatedly violated his duty of fidelity to the defendant from time to time and on many occasions did and performed things intended to serve his personal and selfish interests to the cost and at the expense of the defendant, by which wrong conduct and series of wrong and fraudulent acts losses accrued to the defendant in the aggregate to a sum in excess of $2,500,000; that accordingly the plaintiffs are seeking in the present proceeding to enforce against the defendant an unconscionable, unjust and inequitable claim without paying or tendering to the defendant the losses which have accrued to the defendant by reason of the fraudulent and wrongful conduct of their testate in his lifetime; that accordingly the plaintiff is barred from recovering because with unclean hands they come into equity without a will to do equity."

The defendant says it is under no obligation to exonerate plaintiff for all taxes, or pay the Government during a series of future years until the amount of all the taxes shall be reduced to a fraction of a cent.

Payments to Wood

The answer states the defendant and its subsidiary made the following payments on behalf of William M. Wood: for the year 1918, compensation from American Woolen Co., $756,929.53 from American Woolen Co. of N. Y., one-twelfth of one per cent. of gross sales, $173,875.47, other compensation in connection with an undertaking to sign certain notes of the defendant, $48,000, total compensation, $978,805, income taxes amounting to $709,137.47, total payment, $1,687,942.49; for the year 1919, compensation respectively, $418,403.37, 97,079.50, $32,650, total compensation, $548,132.87, income tax, $363,909.71, total payment $912,042.58; year 1920, compensation, $401,656.42, $92,932.59, $34,150.80, total compensation, $528,739,01, income tax, $309,275.26, total payment, $838,014.27; year 1921, compensation, $377,193.35, $90,366.22, $35,850, total compensation, $503,409.57, income taxes, $325,735.07, total payment, $829,144.64; year 1922, compensation, $668,141.54, $105,392.15, $22,400, total compensation, $795,933.69, income taxes, $453,829.30, total payments, $1,249,762.99; year 1923, compensation, $802,577,02, $126,193, $18,600, total compensation, $947,370.02, income taxes, $414,124.61, total payment, $1,361,494.63; year 1924, compensation, $630,700.20, $98,875.54, $9,500, total compensation, $739,075.74, income taxes, $248,366.74, total payments, $987,442.48.

Boston Stock Auctions

The following sales of textile shares were made at Wednesday's auctions:

Shrs.	Mill	Par	Price	Change
50	Naumkeag	100	172½	—2½
27	Arlington	100	44	—1
26	Farr Alpaca	100	152–154½	—19
17	Pepperell	100	104½	....
3	Wampanoag	100	5	....
14	Bates*	100	108	—⅛
50	Canadian Conn. B	10	75c	....
16	Connecticut, 1st pfd	100	13¾	—4¼
15	Merrimack Hat, com	...	69	+8¼
50	U. S. Worsted, com	...	50c	+15c
30	Lancaster, pfd	100	16⅛	+ ⅛

298 Total.
*Ex. div.

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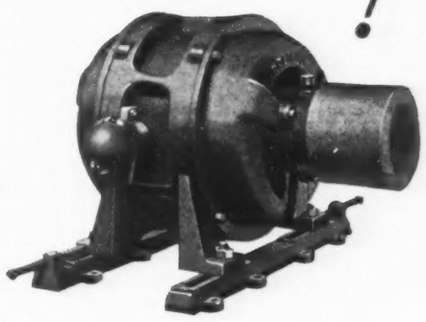

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COTTON YARNS

Fire Loss on Jewell Cotton Mills Paid

SPARTA, GA.—One of the largest fire loss claims ever paid in this section of Georgia is being turned over to the Gant brothers, owners of the Jewel Cotton Mills, which burned last summer. It is reported that the entire amount being paid on the claims is more than one hundred thousand dollars. In addition to this, the insurance companies are turning over the junk to the mills, which will be sold as scrap iron. Owners of the mills are planning to rebuild on the same site in the near future.

Made Field Sales Manager for the Holliston Mills

C. V. Austin, lately district manager of the New York office of the Holliston Mills, Inc., has taken up the duties of field sales manager for the company with headquarters at 32 West 18th Street, New York.

Lee P. Russell, formerly in charge of the St. Louis office territory, but well acquainted with the trade in the East, is now in New York as district manager.

Price Not a Yarn Factor

Stock Yarn Offered from Consignments Held in Spinners' Name

New York.

DOUBTLESS much more irregularity would be in evidence in the carded yarn market if there were more indication of business. As it is, prices are weaker than they were several days ago, but it cannot be said that there is demoralization. As a matter of fact spinners are holding pretty firmly to quotations and although it is difficult to figure how some of the prices named represent replacement cost, the majority are operating on this basis, especially in knitting yarn. The month of January has been a fair month, all things considered, but activity is not anticipated until a better demand is apparent for the product of yarn consumers. It really is not so much a matter of price today as it is the inability to foresee active operation of machinery in those plants where yarn is used.

Question of Stocks

In view of the present retail demand based on a similar movement of manufactured goods, the matter of having yarns available for prompt shipment is one which is occupying considerable attention. Reports have been current that buyers are able to secure yarn in the New York and Philadelphia markets out of stock. As a result of this alleged ability on the part of buyers to have their wants attended to immediately there are those who claim to see in this serving of customers a violation of the code of trade practices. They profess to believe that this yarn is owned by the dealer, contrary to the agreement entered into that the yarn house shall not carry stocks. They seem to lose sight of the fact that there is also a provision in the agreement that yarn may be carried in the selling markets if consigned by the spinner and held in his name with carrying charges and interest accruing to him. In specific instances where this matter has been brought up, selling agents make no bones about having yarn which they can ship from local warehouse, but they do claim this yarn is on consignment and belongs to the spinner. There is no law preventing the latter from accumulating stocks if he so elects, and with the product of a mill sold through an exclusive selling agency there is every reason to believe that the yarn on hand is held for the account of the spinner and does not belong to the dealer.

Spinners and the Agreement

There is no doubt that the spinner has held very firmly to his part of the agreement, even though this policy may have prevented business at times, which under the old regime might have been secured. In other words, the spinner today does not have the outlet among dealers which was formerly the case. In a declining market it used to be possible to secure from large yarn houses orders for good-sized blocks of yarn which were bought for the dealer's own account. This relieved the spinner of a surplus which might otherwise have been burdensome and permitted him to operate his plant on a better basis than though he were dependent upon the actual consumer.

But on the other hand, the spinner is relieved of the speculative element formerly developed by the dealer who

Cotton Yarn Quotations

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Double carded weav'g and knitt'g yarn 2c to 4c higher, according to quality

Single Skeins or Tubes—(Warp Twist)

4s to 8s	—	—30½	20s	—	—34
10s	31	—32	24s	—	—36
12s	—	—31½	26s	—	—37½
14s	—	—32	30s	—	—39
16s	—	—32½	40s	—	—49

Two-Ply Skeins and Tubes

8s-2	—	—31½	26s-2	38	—38½
10s-2	—	—32	30s-2	39	—40
12s-2	—	—32½	36s-2	—	—46
14s-2	33	—33½	40s-2	—	—49
16s-2	34	—34½	40s-2 High breakage	—	—52
20s-2	—	—35	50s-2	—	—60
24s-2	37	—37½	60s-2	—	—66

Single Warps

10s	31½	—32	24s	37	—37½
12s	32	—32½	26s	38	—38½
14s	32½	—33	30s	—	—40
16s	—	—33½	40s	—	—49
20s	—	—34½			

Two-Ply Warps

8s-2	—	—32½	24s-2	—	—37½
10s-2	—	—33	26s-2	—	—39
12s-2	—	—33½	30s-2	39½	—40
14s-2	—	—34	40s-2 ordinary	—	—49
16s-2	34½	—35	50s-2	60	—61
20s-2	35	—35½	60s-2	66	—67

8s-3 and 4-ply skeins and tubes; tinged, 28½–29; white, 30½–31

Hosiery Cones (Frame Spun)

8s	—	—30	22s	34	—34½
10s	—	—30½	24s	35	—35½
12s	—	—31	26s	36	—36½
14s	—	—31½	30s	37	—38
16s	—	—32	30s extra quality	39	—40
18s	—	—32½	40s	48	—49
20s	—	—33			

Combed Peeler—(Average Quality)

Warps, Skeins and Cones

20s-2	—	—46	50s-2	60	—63
30s-2	50	—51	60s-2	67	—70
36s-2	52	—53	70s-2	75	—80
40s-2	54	—56	80s-2	87	—90

Singles

12s	39½	—40	30s	—	—49
14s	40	—40½	38s	52	—53
16s	40½	—41	40s	—	—54
18s	41	—42	50s	—	—61
20s	42	—43	60s	69	—71
24s	44½	—45	70s	77	—80
28s	47½	—48	80s	88	—90

Mercerized Cones—(Combed, Ungassed)

26s-2	64	—66	80s-2	1 12	—1 15
30s-2	66	—68			
36s-2	69	—71	**Singles**		
40s-2	71	—73	30s	—	—80
45s-2	76	—78	40s	—	—85
50s-2	79	—81	50s	—	—95
60s-2	88	—90	60s	—	—1 10
70s-2	1 00	—1 02	70s	—	—1 24
			80s	—	—1 55

Peeler—(Super Quality)

Single Cones

	Carded		Combed			Carded		Combed	
10s	35	—36	44	—46	26s	40	—41	52	—54
14s	36	—37	46	—48	30s	42	—43	56	—58
16s	36½	—37½	47	—49	36s	48	—50	60	—62
18s	37	—38	48	—59	40s	52	—54	63	—65
20s	37½	—38½	49	—51	50s	—	—	72	—74
24s	39	—40	51	—53	60s	—	—	78	—80

Combed Cones, Warps and Tubes

20s-2	50	—52	40s-2	63	—65
24s-2	52	—54	50s-2	70	—75
28s-2	54	—56	60s-2	78	—83
30s-2	56	—58	70s-2	90	—95
36s-2	60	—62	80s-2	1 05	—1 10

Combed Reverse Twist Thread Yarns—Skeins, Tubes or Cones, 2, 3, and 4-ply

	Peeler Average		Peeler Best		Sakelarides Average	Sakelarides Best
24s	—	—59–60	65	—66	82	87
30s	—	—61–62	67	—68	85	90
36s	—	—63–64	69	—70	87	92
40s	—	—68–69	74	—75	92	97
45s	—	—73–74	79	—80	97	1 02
50s	—	—78–79	84	—85	1 02	1 07
60s	—	—88–89	94	—95	1 12	1 17

Quotations are average prices of the counts and qualities indicated at the close of business Jan. 25. They do not cover lower or higher qualities unless specifically noted. For New York spot cotton prices, see page 77. For staple cotton prices, see page 79.

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HAMILTON, CANADA

MILLS
CHESTER, PA. BELMONT, N. C.

Cotton Yarns—Continued

may have had yarn bought at a lower price than the existing market which he could peddle out at a lower figure than the spinner could obtain or lower than he could afford to sell. It so often happened that the selling level of the market was very far removed from the spinner's level of price. This is not possible today, except in the case of those producers who for one reason or another may be willing to cut their own price and undersell the general market. While it may seem that the spinner on the surface is not benefiting perhaps to the degree that the dealer is from the new order of things, yet if the former should ever decide to discard his participation in the rules and regulations adopted for his guidance under the code of practices, it would be necessary to revert to a condition where it would again be impossible for him to control the market after the yarn left his hands.

Tinged Yarn Scarce

Owing to the comparatively small amount of tinged cotton in the current crop, due to favorable growing conditions, yarn made from this character of cotton is comparatively scarce and naturally firm. Efforts to secure 8s-3 tinged at 28c have been unsuccessful; the majority of spinners are holding for 29 or even 30c, although it is possible 28½c might be accepted.

On hosiery yarns the market is generally regarded as based on 31c for 10s, although quotations have been heard as low as 30c. The former figure is regarded today as replacement cost with a possible shading of the basis on favorable purchases of cotton. A few fair orders are said to have been taken from New York state knitters but at low figures. For instance, on 22s as low as 22½c is said to have been accepted, but this is not confirmed nor is 36c for 30s generally considered available.

Raw Cotton Outlook

(*Continued from page 22*)

ment regarding weevil survival. Then will follow a series of reports at brief intervals on emergence. These will throw some light on these processes. But, even so, it will be well along into the growing season before even fairly definite ideas may be gained regarding the character of early summer weather and regarding the rate of propagation of initial weevil.

If, by any chance, the survival reports should indicate virtual elimination of over-wintering weevil, which is scarcely to be expected, this would undoubtedly stimulate acreage increase.

But, given returns indicating even normal weevil survival, these should be a signal to planting interests to concentrate their efforts on heavy fertilization and intensive cultivation. With an unwieldy acreage, the former would prove practically impossible and the latter would be beyond attainment.

Chattanooga Yarn Market Has Been Inactive

CHATTANOOGA, TENN.—The local yarn market continued inactive during the week ending Jan. 21, the old prices being continued unchanged with the possible exception of silk. Thrown silk was being quoted on basis of about $5.55 a pound as the week closed.

In the carded cone field 10s are listed at 32 to 33c and 20s at 34½-35½c. In mercerized, 60s-2 yarns are still quoted at 88c with 20s-2 at 76c and 80s-2 at $1.12. Combed singles are bringing 43 to 44c for the 18s and 82 to 84c for the 70s.

Prices Favor Buyer

Slow Demand a More Important Factor Than Weak Cotton

BOSTON.—If there were more positive evidence of a marked increase in demand for cotton yarns in the near future spinners and dealers would be much stronger in their price attitude, and buyers would find it much more difficult to utilize the weakness of cotton futures as a club to depress yarn prices. However, it is not what the market might be but what the market is that determines values, and there is ample evidence that buyers are using the cotton club effectively, and by their continuation of hand-to-mouth operating are keeping yarn values trending in their favor. Even where spinners have gone the limit to meet buyers' price views the resulting volume of sales is discouraging, although there is every reason to believe that there must be a marked increase in yarn buying within the next few weeks, or as soon as demand for woven and knitted goods shows a substantial improvement.

Good average grades of carded warps have been sold on a basis of 35c for 20s-2 and 39c for 30s-2, while for the highest grade yarns buyers seldom have to pay more than 3c more. There are rumors of sales of average quality yarns below a basis of 35c for 20s-2 warps and 30c for 10s frame-spun cones, but lacking samples of such yarns it is fair to assume that they are lower than average quality. Most spinners, however, are still refusing to sell below a basis of 36c for 20s-2 carded warps and 31c for 10s frame-spun cones and claim that they will increase production curtailment rather than break these prices.

The status of the combed yarn division of the market is no better than that on carded yarns so far as staple counts are concerned; curtailment of production in this division of the market appears to be much more general and radical than on carded yarns, but demand seems to be proportionately curtailed, and in the resulting test of endurance the buyer appears to have the better of it at the moment. While no sales of consequence are reported below a basis of 68c for 58s-2 mercerizing warps and 70c for 60s-2

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SOUTHERN MERCERIZING CO.
Tryon, N. C.
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Standard
Mercerized Yarn

Cotton Yarns—Continued

hard twist, demand at these prices is very limited. The same is true of single combed yarns on a basis of 42 to 43c for average quality 18s, and it is no better on high grade or super quality yarns held 5 to 10c above these figures. It is a trading market and prices of most combed yarns are no more than nominal and practically unquotable.

Further Easing of Yarn Prices

Less Active Trading— Combed Yarns Soft

Philadelphia.

CONTINUED weakness in raw cotton is having the usual effect on the yarn market, prices declining in sympathy with the raw material and manufacturers refusing to make large commitments with prices trending downward. Small lots wanted for immediate shipment are the rule and the total volume for the week has been smaller than last week although dealers here and there state they have succeeded in making fair to large sized sales, the latter being reported by several houses to the plush trade. Manufacturers are not attracted by the low prices being quoted and seem content to buy small lots for immediate needs rather than considering the current level an attractive one to buy ahead. Both carded and combed yarns have reached new low points for the present downward move, declines in the former being from half to cent and in the latter from two to three cents, weakness in combed being more apparent in mercerizing twists.

Weak Spots in Market

There are numerous weak spots uncovered in the market and manufacturers are able to buy fair sized lines at several cents under the level named by spinners. Carded weaving yarn spinners have lowered their basis to 35½c for 20s-2 and one or two have quoted this count at 35c for warps of average quality; 40c is quoted for 30s-2 although a spinner here and there has quoted half cent lower on a firm offer. There have been reports of sales of 20s-2 warps as low as 34c and a larger number of rumors of sales at 34½c which are a cent lower than the average spinner will consider. Sales of 30s-2 warps of ordinary grade have been reported as low as 39c, comparing with a low of 40c named by spinners. Plush quality warps have declined in proportion and are quoted half cent to a cent lower than last week. While the volume of sales is still larger than during December, contracting in these yarns has not continued to expand as was noted last week.

Carded knitting yarns are also less active and sales of average quality yarn have been made at 30c basis 10s while extra-carded yarn used by upstate underwear manufacturers is being held at 39c to 40c for 30s and small interest reported at the lower level. Knitters are unwilling to buy ahead and sales this week have been only for small quantities wanted for quick shipments. Contracting noted during previous weeks with underwear trade has declined, buyers feeling that weakness in cotton will give them the advantage of lower prices than have yet been reached. Several months ago there was a spurt in contracts of knitting yarn when they reached 30c for 10s and spinners looked for a similar condition this week when these yarns touched this figure. There are indications, however, that knitters will wait for a stronger cotton market before resuming active buying though attractive prices are quoted them.

Combed Yarns Lower

Combed qualities have unexpectedly declined further, declines averaging two cents in the finer counts, as compared with last week, which many believed represented the bottom level of the present downward move, quotations having declined steadily during recent weeks reaching a level that represented close to cost to spinners based on long staple cotton. Lack of demand from weavers and mercerizers together with continued easiness in cotton has resulted in prices declining still further although there has been little change in the coarser counts, finer numbers suffering the greatest declines. This is due to the comparative strength displayed in the staples used in these numbers as compared with weakness in such staples as 1¼ in. There has been a large offer in the market this week, a mercerizer offering to take a million pounds of combed yarns on the basis of 56c for 48s-2 and 64c for 58s-2. These prices are at least two cents under the lowest yet named by spinners and this offer has not resulted in a sale.

There have been reports several spinners were willing to sell this count as low as 65c, but the average dealer is quoting 67c and refusing to go lower than 66c, warp and hard twists being held several cents higher. While lack of demand from mercerizers had played an important part in bringing about this major decline in combed yarns of recent months, another important factor has been the different character of the last cotton crop. During the 1926 crop there was a tendency on the part of spinners to use longer staples than had been their custom in order to get the same breaking strength in yarns. This year the condition has been reversed and spinners are again using their regular staples and as a result demand for

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Cotton Yarns—Continued

the longer cottons has been smaller, this trend having a decided effect upon the combed section of the market, together with relatively small demand from mercerizers during recent months.

Mercerized Reduced

Although the new year opened with promise of more active trading in mercerized yarns this has not continued to develop, mercerizers reporting a decline in interest during the last week and the market quiet. The easier trend in combed qualities is having an effect upon sales of mercerized and buyers believe that further weakness in the former will soon result in a lower price basis for mercerized.

Bay State Representatives Have Enjoyable Conference

The Bay State Thread Works with headquarters in Springfield, Mass., and local offices at 225 Fourth Ave., staged a sales convention last week Thursday to Saturday. Eastern representatives, including individuals from Pennsylvania, New Jersey, five men from New York city, others from New York State, Vermont, Wakefield, Mass.; Lynn, Mass., and Boston, attended. Headquarters were at the Holland Hotel, Springfield.

On Thursday night employes in the mill and the salesmen united in an evening of social enjoyment at the Springfield Y. M. C. A.. Bowling, refreshments and dancing were enjoyed. C. E. Chaffin, treasurer and general manager of the company, presided. Special recognition by gifts was made of the three oldest employes, one of whom is in charge of inspection and the other office manager. Those employed 15 and 10 years were also specifically mentioned.

At the sales meeting addresses were delivered by outsiders as well as by members of the organization. George Clark, vice-president of the Third National Bank & Trust Co., of Springfield, and Roe Clark, vice-president of the Package Machine Co., also of Springfield, gave their views on conditions and the outlook. Salesmen were also given an opportunity to discuss their problems and conditions in their respective territories. Altogether the occasion was most interesting and instructive to all concerned.

Hughes Thread Sells Direct

The Hughes Thread Mfg. Co., Vineland, N. J., making a specialty of flatseaming and highest quality mercerized threads for rayon underwear, are now selling their threads direct to the trade instead of through jobbers as formerly. The sales offices are maintained at 226 Lafayette Bldg., Philadelphia, and D. L. Pendleton is in charge. Representatives are also located in Reading, Pa., and Albany, N. Y., and it is planned to establish other representation in other important textile centers, in the near future.

Waste Market Slows Down

Prices Holding Firm But Demand Is Light and Bearish

BOSTON.—The spot situation in cotton waste is quiet. A number of important contracts are yet to be closed both North and South. Some of the largest houses in the trade do not close their contracts until around the middle of January. Until these are consummated and the buyer knows what price he will have to pay he is likely to do little in the way of offering materials either on contract to his usual line of consumers or to dealers in the market for the several specifications. One of the leading members of the exchange states that consumers have still in their possession some quantities of low-priced waste. The high prices made necessary by high-priced cotton are accepted by consumers only under the compulsion of having to replenish their supplies.

In spite of the generally favorable outlook a little caution at this time may not be out of place. Two outstanding probabilities are looming up more distinctly, the first being a very general decrease in the domestic consumption of cotton and the other the moral certainty that next season's crop will be a larger one. There has been extensive purchasing of fertilizers recently and the planting of a much larger acreage than last year seems inevitable. Extensive curtailment in cotton consumption was indicated very clearly by the Census Bureau report which gave the consumption of cotton for December at 543,598 bales as compared with 625,680 bales in November.

The daily fluctuations of cotton last week had no material effect on comber, the several strips, fine cop or spinnable fly. In threads the situation is less regular. Prices on similar materials are occasionally quite wide. Consumers offer strong resistance to any advance in asking prices. Fine white cop is on a 13½-14c basis, cop and spooler 12-13c; white threads for machining 12½-11c; colored threads for machining, 9½-10c. Some choice spinnable fly sold as high as 9c. The best picker is on a 6-6½ basis. Card and spinning room sweeps are firm at 3-3½c with weave room sweeps in accumulation and obtainable below 1c.

Exports of cotton waste from Boston for the month of November amounted to 1,104,000 pounds. To England went 640,000 pounds at 16c; to Germany, 438,000 pounds at 7.7c; to Belgium, 103,000 at 5c. Philadelphia exports were negligible, 11,000 pounds to Great Britain at 13c per pound.

Current Quotations

Peeler comber	18	—18½c.
Peeler strips	17	—17½c.
Egyptain comber	16	—17c.
Choice willowed fly	8	— 8½c.
Choice willowed picker	6	— 7c.
Sak. strips	20	—21c.
Linters (mill run)	5	— 5½c.
Spoolers (single)	13	—13½c.
Fine White cop	14	—14½c.

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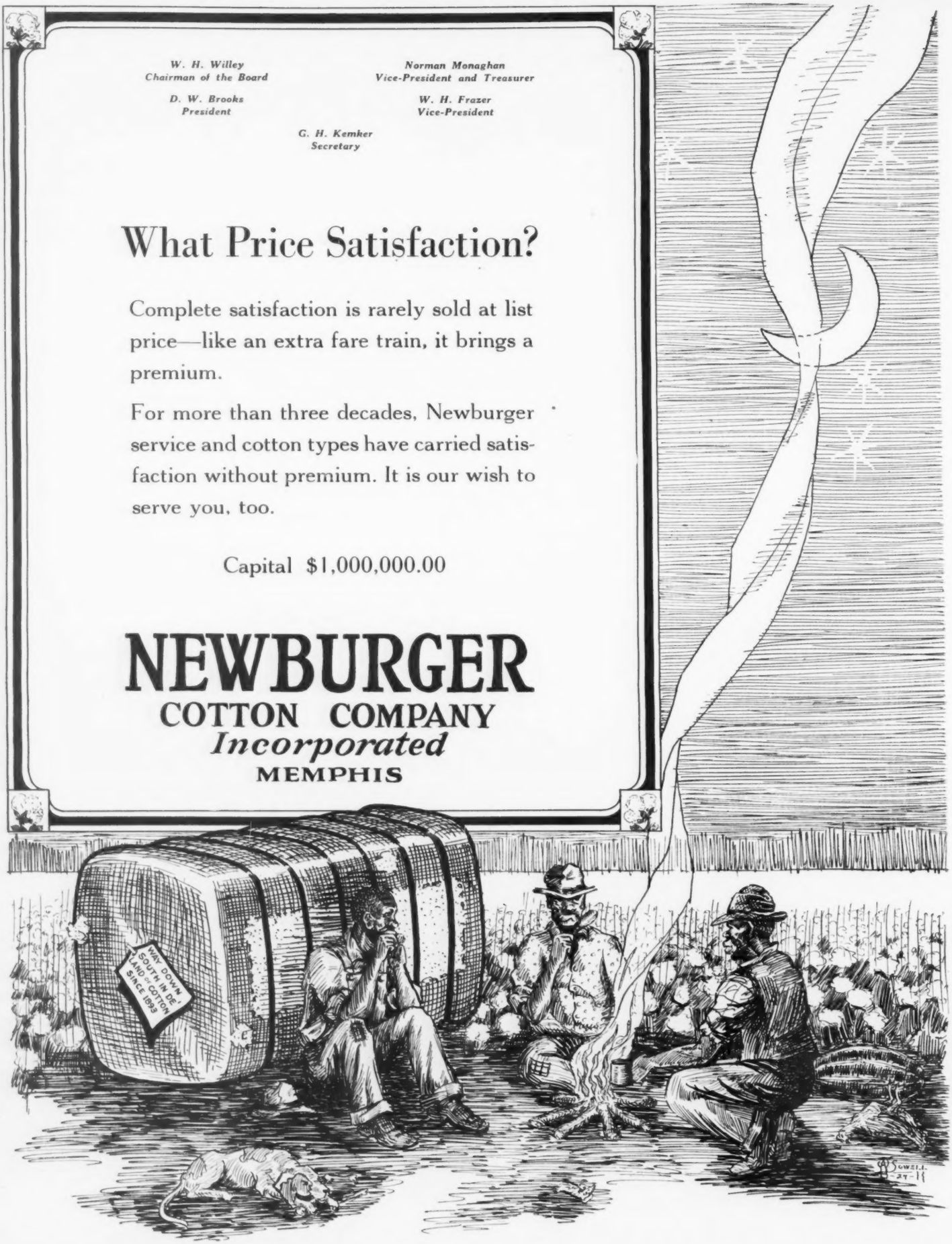

COTTON

Cotton Lower with Little Demand

Ginning Figures Closely in Line with Government Forecast

THE action of the cotton market during the week would seem to have reflected the failure of trade demand to increase as anticipated after the turn of the year, combined with a more or less general belief that there will be an increase in acreage planted this spring. The report of the Census Bureau on ginnings prior to Jan. 16 may have been a shade over expectations and a disappointment to holders of contracts who had been hanging on in the hope that it might show that the crop had been over-estimated. The figures were most generally interpreted as pointing to a crop close to the Government estimate of last December or possibly 100,000 bales over that figure. Offerings increased following its publication as if the uncertainty of the report had previously tended to restrict selling, and the market has made new low ground for the season on most positions during the week. The volume of business is not so heavy, with the absence of demand reflected by the market's responses to comparatively small selling orders. Some trade buying and covering made its appearance as prices approached the 18c level for March, but the buyers showed little disposition to follow up even moderate rallies.

While it is generally anticipated that the carryover of American cotton will show a considerable decrease from the big figures of last year, the falling-off in consumption since the big forward business of last spring and summer ran out, has suggested that the reserve supply at the beginning of August will be sufficient to afford considerable protection against coming crop hazards. That is to say, the statistical position may have been strengthened sufficiently by the short crop of 1927 to insure market responses to any serious drawback to the coming crop outlook, but not sufficiently so to promote a bullish sentiment until more is known of the acreage likely to be planted, or the coming crop start. At present there appears to be only one point of criticism on conditions bearing upon coming crop prospects. That is the drouthy condition in West Texas which some think may tend to hold down the acreage in that section or possibly jeopardize the outturn should there be a dry growing season. The market, no doubt, has been discounting increased acreage and increased use of fertilizers. It is a question just how much of an increase is expected. Few traders seem inclined to put their expectations in the form of definite figures, but in a general way there is talk of an increase ranging from 5 to 10 and in some cases up to 15%.

The following table shows Wednesday's closing quotations in the leading spot markets of the country with the usual comparisons:

Market	Jan. 18	Jan. 25	Ch'ge	Last year	Sales
Galveston	18.90	18.15	—75	13.10	10,437
New Orleans	18.73	18.11	—62	13.20	4,278
Mobile	18.75	18.10	—65	12.50	609
Savannah	18.90	18.21	—69	12.85	550
Norfolk	19.00	18.31	—69	13.06	2,130
New York	19.25	18.55	—70	13.50	7,570
Augusta	18.94	18.06	—88	12.81	3,668
Memphis	18.30	17.65	—65	12.75	11,475
St. Louis	18.75	18.00	—75	12.25	.....
Houston	18.85	17.95	—90	13.05	13,786
Dallas	18.05	17.35	—70	12.20	32,683

The following differences on and off middling are given as compiled from the report received by the New York Cotton Exchange. The cotton grades marked ** are not deliverable on contract.

	Dallas	Memphis	Montgomery	Augusta	Average
WHITE GRADES					
M. F.	1.00†	1.25†	.70†	.94†	.98†
S. G. M.	.65†	1.00†	.55†	.75†	.75†
G. M.	.50†	.75†	.40†	.38†	.54†
S. M.	.35†	.50†	.25†	.25†	.37†
S. L. M.	.50*	.40*	.50*	.25*	.41*
L. M.	1.25*	1.00*	1.00*	.75*	.98*
S. G. O.**	2.25*	2.00*	1.50*	1.25*	1.85*
G. O.	3.25*	2.50*	2.00*	1.75*	2.68*
YELLOW TINGED					
G. M.	.25*	.50*	.40*	.25*	.38*
S. M.	.50*	1.00*	.65*	.50*	.72*
M.**	1.25*	2.00*	1.50*	.75*	1.51*
S. L. M.**	2.25*	3.25*	2.25*	1.13*	2.47*
L. M.**	3.25*	4.50*	3.00*	2.38*	3.59*
YELLOW STAINED					
G. M.	2.00*	1.50*	1.75*	.75*	1.55*
S. M.**	2.25*	2.00*	2.25*	1.25*	2.08*
M.**	3.00*	2.75*	3.00*	1.75*	2.58*
BLUE STAINED					
G. M.*	2.00*	2.00*	1.75*	1.75*	1.84*
S. M.*	2.25*	3.00*	2.50*	2.50*	2.50*
M.**	3.00*	3.50*	3.25*	3.50*	3.34*

* Off middling. † On middling.

Cotton Statistical Data
(Fluctuations of Futures, N. Y.)

	Closed Jan. 19	For Week High	For Week Low	Closed Jan. 25	Net Ch'ge
January	18.81	18.81	18.05	.....	.....
February	18.81	18.81	18.07	18.07	—.74
March	18.82	18.85	18.05	18.05	—.77
April	18.87	18.87	18.10	18.10	—.77
May	18.91	18.94	18.10	18.14	—.77
June	18.84	18.84	18.09	18.09	—.84
July	18.76	18.79	17.95	17.97	—.79
August	18.58	18.58	17.85	17.82	—.76
September	18.41	18.41	17.89	17.71	—.70
October	18.24	18.26	17.50	17.51	—.73
November	18.22	18.22	17.49	17.49	—.73
December	18.15	18.18	17.43	17.48	—.67

Spot Fluctuations for Week
(Middling)

	New York	N. Orleans	Liverpool
Friday, Jan. 20	19.25c	18.88c	.....
Saturday, Jan. 21	19.05c	18.71c	.....
Monday, Jan. 23	18.85c	18.41c	.....
Tuesday, Jan. 24	18.65c	18.11c	10.38d
Wednesday, Jan. 25	18.55c	18.11c	10.28d
Thursday, Jan. 26	18.80c	18.27c	10.30d

Spot Fluctuations and Stocks

	Prices Jan. 25	Stocks This week	Stocks Last year
Galveston	18.15	477,233	728,569
New Orleans	18.11	520,421	678,973
Mobile	18.10	19,267	48,651
Savannah	18.21	44,592	131,090
Charleston	.....	33,429	84,969
Wilmington	.....	22,713	16,734
Norfolk	18.31	88,895	120,040
New York	18.55	195,699	154,489
Houston	17.95	919,897	1,006,069
Augusta	18.06	96,394	109,634
Memphis	17.65	250,883	317,080
St. Louis	18.00	2,731	8,114

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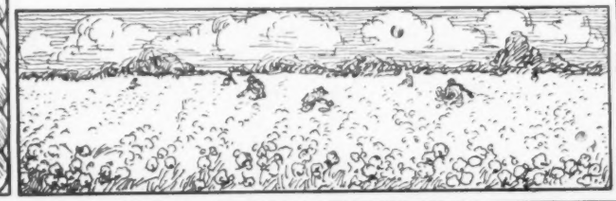

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Cotton—Continued

Mixed Situation in South

Brief Selling Pressure on Cotton Has Been Overcome

MEMPHIS, TENN., Jan. 23—Pressure to sell middling and better staples was pronounced early in the week but the hysteria has been largely overcome. Perhaps it was due in the first place to the necessity to meet tax payments at Feb. 1 and secondarily to the weariness of holders who have hoped all season that each new week would bring a better demand for their neglected product.

The premium on middling and better 1⅛" staples has been reduced about 50 points but on 1 3/16" and longer has advanced 50 to 100 points; heretofore there have been so few sales of the better length high grade staples that quotations were merely nominal and most shippers were saying that the cotton could not be bought at quotations and at the same time there was no demand for it. Several sales of the better grades and lengths of staples were made during the week. One sale of middling full 1¼" at 27.75c., was reported. Shipper demand still centers upon grades below middling in all lengths, of which the supply is inadequate. Low grades constitute a considerable percentage of current receipts and some bollies and snaps are beginning to make their appearance from portions of the Mississippi Valley where the planting was delayed by floods; bollies and snaps, tinges and blues, 1 to 1/16" are bringing 16c., and up to 18c., according to color and length.

Sales at the following prices were reported during the week: Middling, full 1¼" at 27.75c., strict middling 1 3/16 to 1 1/4" at 26.50c, middling and strict middling full 1 3/16" at 23.50c., strict low middling dull 1 1/8" at 19.75c., and strict low middling 1 1/16" at 19.50c. Interior points reported sales at the following prices: Strict low middling bright 1¼" at 26.50, middling to strict middling 1 3/16" at 22.50c., middling 1⅛" at 21.50, strict low middling bright at 21c., dull 20.25c., low middling bright 19.75c., strict low middling, government box color, 1 1/16" at 19.13.

Market Statistics

Basis Middling

	Saturday, Jan. 21	Saturday, Jan. 14
10 markets average	18.45	18.71
Memphis	18.20	18.50

Premium Staples

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices steady
1⅛-in.	21¼@21⅜c
1 3/16-in.	23¼@23⅜c
1¼-in.	25½@26½c

Current Sales

	For week	Prev. week	Week before
Memphis total	13,025	13,175	9,550
F. o. b. included in total	10,825	9,800	7,350
10 markets	65,280	59,677	46,615

Memphis Receipts, Shipments, Etc.

	For week	Last year	Year before
Net receipts	8,953	17,586	20,746
Gross receipts	31,802	61,994	51,436
Total since Aug. 1, net	505,733	590,763	570,459
Shipments	42,674	67,163	48,261
Total since Aug. 1	862,566	1,253,191	1,030,214
Total stock	158,699	321,145	282,911
Decrease for week	10,871	5,169	*3,195
Unsold stock in hands of Memphis factors	95,165	135,500	.....
Decrease for week	2,835	17,500	.....

*Increase.

Slump in Extra Staples

Basis Declines More Than Futures and Demand Is Negligible

BOSTON, Jan. 25.—As a result of the protracted period of dull demand for extra staple cottons, plus a larger increase in the Delta yield of such cottons than was deemed possible until recently, and also the weak technical position of many shippers, basis on practically all grades excepting the lowest and the highest has slumped within the last week or ten days from 100 to 150 points, and is now not only lower than at any previous period this season, but lower than for any period last season excepting during two or three weeks of October when receipts were the heaviest.

The greatest selling pressure seems to have been concentrated on commercial and full 1 3/16 in. cotton, and it is claimed in some quarters that hard western cotton of the latter length and middling grade has been practically unsalable above 500 points on March. A full price for Association 6s of middling grade is said to be 400 points on March, and for association 7s 450 points on March. Association 8s that are strict low middling for leaf and middling in color have been sold at 450 points on March, while the average price of strict middling grade is about 75 points over middling in extra staples, with some shippers holding for a premium of 100 points.

The tire trade has been buying in a moderate way, but it seems surprising in view of the relatively much higher price of Egyptian Uppers that this trade continues to operate so cautiously; active buying from this quarter may develop at any time.

Egyptian futures show a net decline for the week of close to 160 points, and a rather strange feature of the situation is that Sak. is a little firmer than Uppers. On the new crop options, however, the situation is the reverse, and Uppers are stronger than Sak.

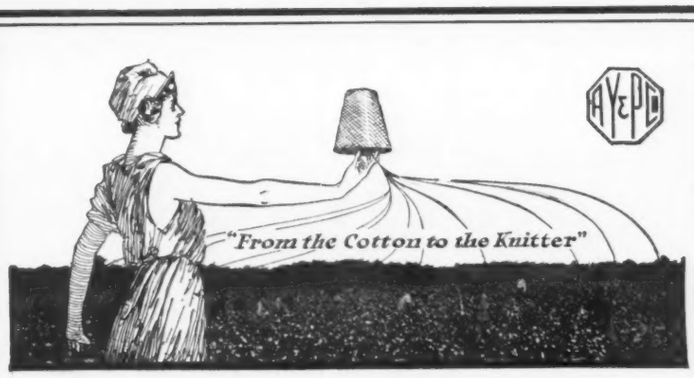
Current Quotations

Average prices for Feb.-March shipment of middling and strict middling hard western cotton (Government lengths) are as follows:

	Middling	St. Middling
1 1/16 in.	22 to22½c.	22½to23c.
1 1/16 in. to ⅛ in.	22¾to22⅞c.	22⅞to24¼c.
1 ⅛ in.	22½to23c.	23 to24c.
1 3/16 in.	23½to24c.	24 to25c.
1 ¼ in.	26 to27c.	27 to28c.

Basis on N. Y. Mar. 18.05c.

John Malloch & Co., Boston quote Egyptian cotton, c. i. f. Boston for Feb.-March shipments as follows: Medium Sakellarides, 32⅝c., off 1¼c. Medium Uppers, 27c, off 1⅝c, from Jan. 18. They report closing prices Jan. 25 on the Alexandria exchange as follows: Mar. Sak. $33.54, off $1.56; Feb. Uppers $24.79, off $1.57 from Jan. 18.



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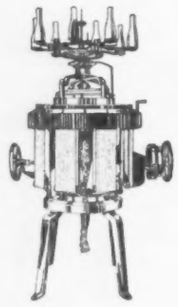

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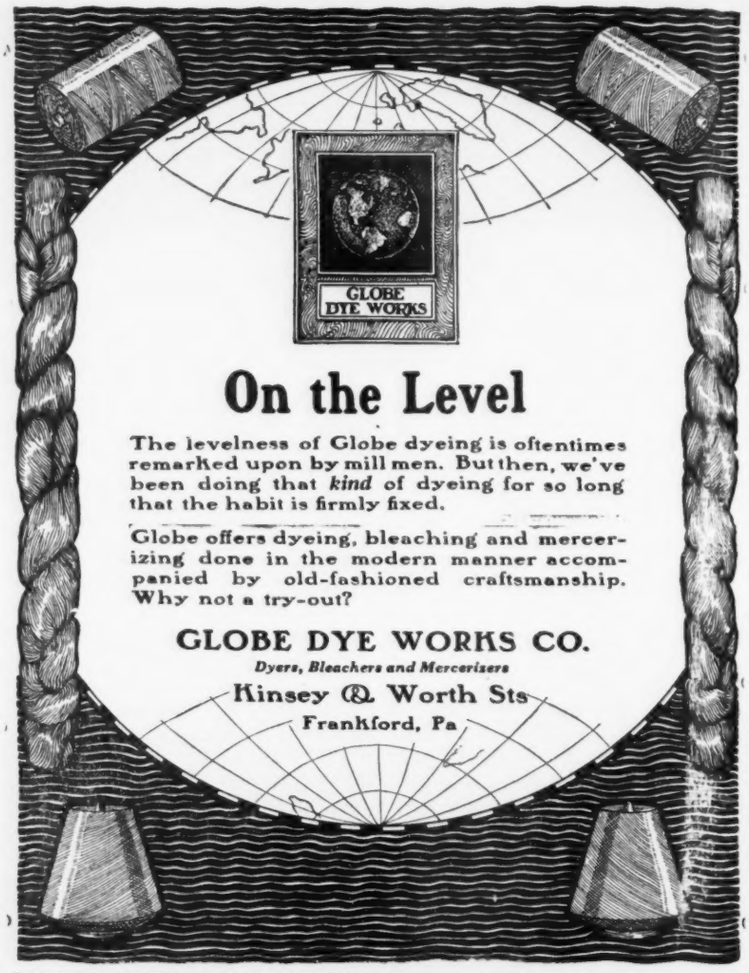

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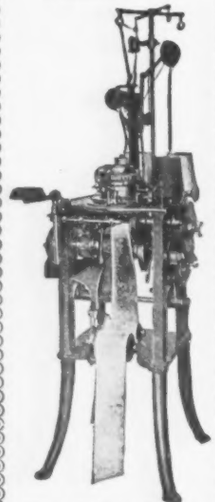

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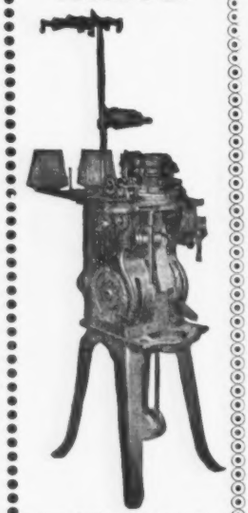

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WORSTED YARNS

Higher Price Level for Crossbred Tops

South American 46s Sell At $1.00 —All Tops Move Upward— Firm Noil Situation

BOSTON.—Most topmakers have now based their asking prices flatly upon current wool costs. Quotations following this market have advanced an average 3c per pound for the week and at least half this has been realized on sales made. Tops made from foreign cross-bred wools have been lifted sharply and it has been necessary to explain to consumers the unusually strong situation in these wools, based on limited spot stocks and prohibitively high prices in New Zealand and South America. South American 46s top sold during the week at $1.00 and 44s at 95c. General demand, however, ran more to the domestic grades, sellers getting $1.40 for fine, $1.28½ for ½ blood, $1.18 for 58s and for low ⅜ blood, $1.10. The Bradford market continues its upward move, 60s, 58s, 50s and 46s advancing 1 penny per pound. Shipping specifications in the local market are exceptionally good. Buyers are taking stock as fast as made.

The noil market is firm. Business shows a slight expansion but on the whole consuming is still lagging. It seems evident that although many of the fabrics to be shown at the goods opening will be advanced in price the heavier weight materials are likely to open somewhere near last year's level. Any idea that mill consumers of noils will pay higher prices without a very determined resistance seems chimerical. At the close of the week several small noil consignments arrived from England covering 26 bales of wool, 5 bales of cashmere and 21 bales of silk. Advices from the Bradford market indicate that Boston is showing more interest in fine crossbreds and also in merino noils. Indications are that Boston requirements will be considerable during the next few months.

Top and Noil Quotations

Tops—Boston	Nominal
Fine (64–66s)	$1.42–$1.43
Half-blood (60–62s)	1.30– 1.32
High ⅜ blood (58s)	1.20– 1.22
Aver. ⅜ blood (56s)	1.15– 1.16
Low ⅜ blood	1.10– 1.12
High ¼ blood (50s)	....– 1.10
46s	.99– 1.00
44s S. A.	.93– .95
40s	.90– .91
36s	.88– .90

Tops—Bradford, Eng. (Jan. 12)	
Fine (70s)	57d
Fine (64s)	54d
Half-blood (60s)	51d
Half-blood, low (58s)	47d
Three-eighths blood (56s)	42d
Quarter-blood (50s)	32d
Cross-bred (46s)	25½d

Noils—Boston	
Fine	$.85– $.87
Half-blood	.75– .78
High ⅜ blood	.67– .70
Aver. ⅜ blood	.60– .63
Low ⅜ blood	.58– .60
High ¼ blood	.58– .60
46s	.53– .55
44s	.50– .52
40s	.50– .52

What Will Result From Survey?

Limited Number of Firms Interested Is a Handicap

Philadelphia.

COST survey of 21 worsted spinning plants, practically all of which are spinners of outerwear counts exclusively, has been completed, having been presented at a meeting of representatives of the various concerns interested recently. A larger number of spinners had originally signified their willingness to have such a survey made of their plants by a nationally recognized accounting concern which had previously successfully completed surveys of other industries including the steel, but the actual survey included only 21 spinners and in its present status is therefore hardly representative of the entire outerwear group.

Results of this survey are available only to those concerns that permitted their plants to be examined and while there is a diversity of opinion as to value of the results attained by it, approximately half of spinners expressing satisfaction and the balance believing little of real value has been done, all agree that little practical benefit to the entire trade can possibly develop until a far larger number of concerns are covered by it.

Not Representative

While there is no desire on the part of these spinners to criticize this survey and what it is intended to eventually lead to—the placing of the worsted yarn trade on a more efficient and more prosperous basis—they frankly point out several obstacles that are yet to be overcome before these results can be seriously expected to develop. In the first place all admit that little can be expected to ensue either for the individual spinner or for the spinning trade as a whole from such a line of endeavor until a more representative number of spinners submit to a cost survey, a considerably larger number than the 21 now represented.

In the second place several spinners in this group emphasize that there are not only disadvantages to come from the relatively small number of firms represented, but they point to the large number of knitting yarn spindles that are not operating at present but could within a short period become competitive should the spinning trade be placed on a more profitable basis as the result of some cooperative action following this survey. This number represents a considerable number of spindles, including various concerns that are not producing at present, their plants being closed, but which could within a short time again become important factors in spinning of yarns for sale. There are several plants in this category in the vicinity of Philadelphia, the largest of which has an equipment of more than 16000 spindles which could within a short time again enter the field as a competitor.

Would Attract Weaving

In addition to these obstacles spinners of outerwear yarns call attention to the fact that should this survey be the first step in placing knitting yarn spinners in a more advantageous and profitable position this change would no doubt result in a large number of spindles, now producing weaving yarns exclusively, turning again to the production of the more profitable outerwear counts should this survey actually change the status of outerwear spinners and is an argument in favor of those who believe little real good can be accomplished until all spinners, weaving and knitting, join such a movement. Many spinners now turning out plush or other weaving yarns could with comparatively little difficulty turn their entire plants over to production of outerwear counts and would undoubtedly do so should the one section of their business become more profitable than spinning of weaving counts.

To many spinners the cost survey is another example of the fact frequently pointed out by many leaders in this section of the industry, that worsted spinners are not yet ready as a group to join any cooperative movement and also to prove that comparatively little can be accomplished until this condition is changed and at least two-thirds of all of the spindles are represented in such a movement, both weaving and knitting, and are enthusiastic supporters of it and not anxious to criticise initial moves made by others. In this connection it is interesting to note that while the more optimistic spinners believe progress along these lines may be expected during the present year there are many others who frankly state in their opinion the year will be the most keenly competitive spinners have experienced, basing this upon the action of wools, giving certain spinners a price advantage over competitors who are dependent upon higher costing raw material.

Going Price Unchanged

Although spinners' margins on weaving yarns are in at least as unsatisfactory condition as knitting yarns, and in most instances more so, attention is called to the fact the latter group is still unable to sell large quantities of yarn above the $1.30 level for 2-20s high quarter blood although wools and tops have advanced five or more cents since this price was first placed into effect. There are spinners who assert they are unable to buy wools at present and sell at $1.35 or $1.40 with any profit, indicating that those selling at $1.30 are possibly making a small margin based upon wools which they have held for several months, purchased at considerably lower levels.

While there are indications the $1.30 price for 2-20s will not be of long duration so far as spinners are concerned, it should be emphasized that there are jobbers who are in position to sell yarns at this price and make a fair profit for several weeks ahead, these jobbers being in possession of low priced contracts with spinners on which deliveries are called for until April. As jobbers paid between $1.15 and $1.20 for this yarn months ago they are in good position to secure business from spinners who are confronted with an exceptionally strong wool market. This is to many another example of what may be corrected only through cooperation by a majority of spinners and not by a 25% representation as was found in the cost survey among outerwear group.

WORSTED YARN QUOTATIONS

(Corrected to Close of Business Wednesday)

Bradford System	
2-12s, low com. (36s)	1.00–1.02½
2-16s, low com. (36–40s)	1.05–1.07½
2-20s to 2-24s, low ¼ (44s)	1.17–1.23
2-20s to 2-26s, ¼ bld. (46–48s)	1.27–1.32
2-26s to 2-30s, ¼ bld. (48s)	1.34–1.38
2-30s to 2-32s, ¼ bld. S. A. (46s)	1.37–1.40
2-32s, ¼ bld. (48–50s)	1.40–1.45
2-20s, ⅜ bld. (56s)	1.45–1.50
2-26s, ⅜ bld. (56s)	1.50–1.55
2-36s, ⅜ bld. (56s)	1.55–1.60
2-32s, ½ bld. (60s)	1.65–1.70
2-36s, ½ bld. (60s)	1.70–1.75
2-40s, ½ bld. (60–64s)	1.75–1.80
2-50s, high ½ bld. (64s)	1.95–2.00
2-50s, fine, (66–70s)	2.05–2.10
2-60s, fine, (70s)	2.50–2.55

French System	
20s, high, ¼ bld. (50s)	1.37–1.40
20s, ⅜ bld. (56s)	1.47½–1.50
26s, ⅜ blood (56s)	1.55
30s, ½ bld. (60s)	1.72½–1.75
30s fine warp (66–70s)	1.85–1.90
40s, ½ bld. (60–64s)	1.85–1.90
50s, (66–70s)	2.10–2.15
60s, (70s)	2.50–2.60

Knitting Yarns in Oil (Bradford)	
2-20s, low, ¼ bld. (44s)	1.17½–1.20
2-18s to 2-20s, ¼ bld. (50s)	1.32½–1.35
2-26s, ¼ bld. (50s)	1.38½–1.41
2-30s, ¼ bld. (50s)	1.42½–1.45
2-20s, ⅜ bld. (56s)	1.47–1.52
2-20s, ½ bld. (60s)	1.70–1.75

French Spun Merino White	
30s, 50–50	1.32½–1.35
30s, 60–40	1.42½–1.45
30s, 70–30	1.52½–1.55
30s, 80–20	1.62½–1.65

"The Hallmark of Quality"

OUR trade mark upon the finished fabric, whether Dyed, Printed or Weighted, carries a definite assurance of the highest attainments in quality of workmanship.

United Piece Dye Works

DYERS, PRINTERS, FINISHERS OF TEXTILE FABRICS IN THE PIECE
SCIENTIFIC WEIGHTING - - SKEIN DYEING
LODI - - NEW JERSEY
New York Office: 132 MADISON AVENUE
Mills:
LODI, HAWTHORNE, PATERSON, N. J., *and* ALLENTOWN, PA.

BLEACHING COTTON

with

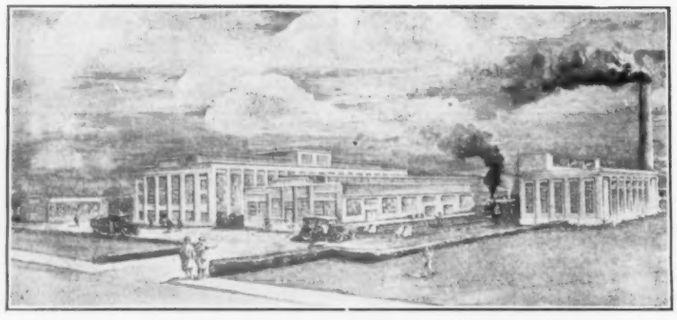
Becco Electrolytic Hydrogen Peroxide

The boil-off is eliminated

The goods are bleached in from 6 to 12 hours

The strength of the thread yarns is in no way impaired

Loss in weight is reduced to a minimum averaging from 1 to 3 per cent against the weight of the unbleached goods



Labor is minimized

The white is a real white and is permanent

The bleach is economical

The finish is a revelation

BUFFALO ELECTRO-CHEMICAL CO., Inc.

Station B, Buffalo, N. Y.

Worsted Yarns—Continued

"Price Based on Cost"

Bradford Slogan Indicates Way Out for Yarn Spinner

BOSTON.—New business is slow in the yarn market but spinners are more active in shipping out yarns against old contracts made before wools and tops took the upward path. New business except at new prices is not particularly desirable. The much needed thrust toward higher yarn values will not come from below but from above, from the goods market provided that prices, as generally anticipated, open above January 1927 level.

"Worsted yarn spinners must get better prices on their products or else the industry will perish everlastingly," a rather strong statement yet not without much truth. The industry is sick and further spindle mortality is inevitable unless a radical and favorable change for the sales spinner appears in the near future. Yarn prices on the average are about where they were a year ago. According to one observer spinners are getting a little more for their yarns but this is not exactly visible except perhaps in a yarn like 2-20s made from 50s top. It is the old story that the nearer to the goods market and the harder to get satisfactory prices for semi-manufactured products. The general situation as compared with a year ago is shown approximately in the following table:

	1928	1927
Yarns	$1.76	$1.76½
Tops	1.24	1.18
Wools	1.02	.93

Spinners in the Bradford district are fairly well occupied and what is more to the purpose are able to obtain higher prices for their products. Quotations following this market are up 1 penny per pound for the week, and this is typical of the market as a whole. There has been a noticeable improvement in yarns and piece goods in the English market. The elimination of price cutting in yarns is a most favorable feature.

BRADFORD (Eng.) YARNS

	s	d
2-16s, 36s	2	4
2-20s, 44s	2	8
2-26s, 58s	4	8
2-48s, 64s	5	11
2-60s, 70s	6	11

N. H. Objects to Proposed Change in Freight Zoning

Representatives of the woolen and worsted interests throughout New Hampshire have joined together and allied themselves with the New Hampshire Manufacturers Association in an effort to avoid and prevent changes in proposed freight plans of the Boston & Maine Railroad which would be a handicap to their industries.

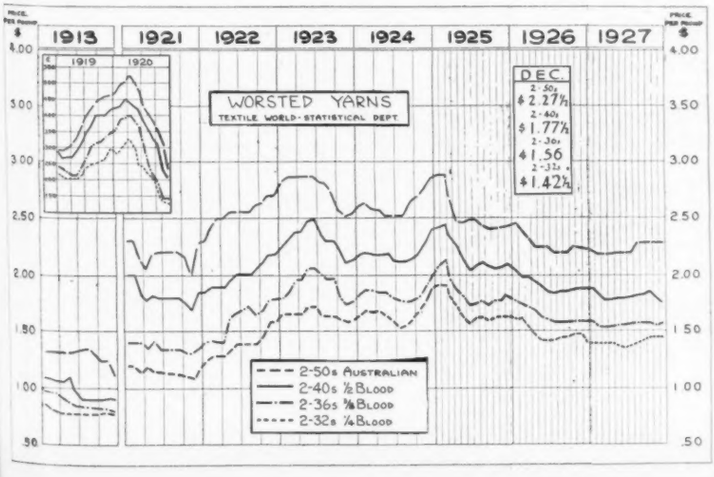
The proposed plan of the railroad which would injure and work a hardship on the woolen and worsted interests of New Hampshire is the one that would place New Hampshire in the same freight zone as Portland, Me. At present the State is in the Boston Zone. The textile interests are planning to lend financial aid to fight this plan of restriction which would tend to raise freight rates.

Officials of the group headed by President J. Levi Meader of Gonic, met recently with traffic manager John J. Cummings of the New Hampshire Manufacturers' Association. The latter outlined the plan of procedure against the railroad, which has included overtures to the Interstate Commerce Commission to suspend action on the proposed schedule. If the State is added to the Portland Zone, industries in New Hampshire will be seriously handicapped in their efforts to compete with Massachusetts companies. Moreover it would be increasingly hard to induce new industries to locate in New Hampshire.

Phila. Partnership Dissolved

Announcement is made by John S. Bowes Co. that this partnership has been dissolved as of Jan. 21, by the withdrawal of Thomas A. Cashin. John S. Bowes will continue in business under his own name, handling worsted, woolen, and silk yarns, etc., at the same address for the present. 1600 Arch St., Philadelphia.

Thies Dyeing & Processing Co., Belmont, N. C., is putting the finishing touches to its plant and will start dyeing and bleaching yarns on perforated tubes, beams, etc., in about three weeks. J. E. Sirrine & Co., engineers, Greenville, S. C., designed and supervised construction of the Thies plant.



Pocasset Worsted Company, Inc.

Worsted Yarns

Office and Mills *Thornton, R. I.*

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GRAY AND FANCY SHADES
BRADFORD STEEL SYSTEM
TWISTS AND MIXTURES
WEAVING-KNITTING

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Successor to EDWARD T. STEEL & CO.
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JD FRENCH SPUN YARNS
FOR KNITTING AND WEAVING
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JULES DESURMONT WORSTED CO.
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New York—Charles Heyer, 1 Madison Ave.
Chicago—222 W. Adams St.
Boston and New England States—Messrs. H. W. Dwight and Walter Skerry, 10 High St., Boston.
Los Angeles, Calif.—Harvey J. Masteller.

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WORSTED YARNS

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RAYON TOPS·NOILS PICARDED
Spunrayarn and Rayon-Worsted Blends
ABEECO MILL, INC., 505-5TH AVE., NEW YORK CITY
CANADIAN REPRESENTATIVES: WM. B. STEWART & SONS, LTD., TORONTO-MONTREAL

SOFT as the petals of a rose .... because there are *more* filaments in a thread. And because of their strength and beautiful, subdued lustre, Du Pont Super Extra yarns are preferred by all manufacturers of truly high-grade fabrics.

Du Pont Super Extra yarns are *truly* multi-filament.

Denier	*Filaments*
65	26
80	30
100	40
125	50
150	60
170	60
200	80

DUPONT RAYON

Reg. U. S. Pat. Office

Super Extra

Du Pont RAYON

DU PONT CHEMICAL CONTROL ASSURES DU PONT QUALITY

RAYON AND SILK YARNS

Furness Corp., Not Ready to Make Further Announcement

PHILADELPHIA.—Commercial production of rayon by the Furness Corp., of Gloucester City, N. J., will start this year according to F. R. Hansell, associated with this company, which was incorporated last July. He also stated they had not authorized any statement as to their plans since that time. A detailed description of the new company and their future plans was published in July 23, 1927 issue of TEXTILE WORLD. Rayon produced by a new process, perfected by William H. Furness, after whom the company was named, will be offered to the trade later this year, after further experiments are completed and production of the plant is placed upon a commercial basis.

The process is a form of the cupra-ammonium used by several other concerns but possesses exclusive features of which Mr. Furness is the originator. New company occupies space in the Welsbach Co., building at Gloucester City, a short distance from Philadelphia. Sidney Mason, head of Welsbach Co., manufacturers of gas mantles, who is also interested in the Furness Corp., and F. R. Hansell, have stated that recent reports published in the daily press in regard to this rayon company were unauthorized and they were not ready at this time to add any details to their original announcement made last July when the Furness Corp., received its charter.

Delaware Rayon Co., to Increase Production

NEW CASTLE, DEL.—Increase in capitalization of the Delaware Rayon Co., manufacturers of rayon, will permit this firm to erect new buildings and increase their capacity 100%, an increase of $450,000 having been recently voted by stockholders. The company is producing 3,000 lbs. per day and it is planned to raise this to 6,000 lbs. per day by early fall. They are planning to erect a number of homes on company property, offering them to employes on an easy time-payment basis.

Proctor Woolen Mills Gives Bonus

The employes of the Proctor Woolen Mills, Proctorsville, Vt., were agreeably surprised one day recently when Office Manager Arnold Berry passed through the mill and handed out to each employe an envelope containing a gift of money and a letter from the management thanking them for their cooperation, loyalty and moral support during the year.

"We have been through a year of poor business," said the letter, "and also a terrible flood, but, in spite of it all, like live fish we are still swimming up stream."

Rayon Works into Stronger Position

Heavy Buying for Knitting Account Is Noted — Imports Are Increasing

The rayon market took on the appearance of still greater activity and it is understood that at least one or two of the largest sellers have practically withdrawn from the market. Cotton mills are understood to be showing the usual upturn in demand with interest shown on their part in deliveries up through May, at which time their season should be fairly well completed. There is some difference of opinion as to whether rationing of customers has been started, but if it has not been already, the chances are that this move will take place at no distant time in the future.

Imports of rayon yarns for the year 1927 were reported last week by the Bureau of Commerce and presented some interesting details. In the first place total imports made a new high record of 16,200,000 lbs. which compares with 10,000,000 lbs. in 1926 and 7,000,000 lbs. in 1925. The percentage increase over 1926 is about 60%. While imports of rayon yarn were increasing so strikingly, imports of rayon waste declined.

The most striking increases took place in the case of Italy and France. Imports from Italy rose from 2,390,000 lbs in 1926 to 6,800,000 lbs. in 1927. Imports from France showed a proportionate jump, rising from 710,000 to 2,800,000 lbs. The reason for the increase in the case of France can be seen in the sharp reduction in costs per pound which declined almost half. German rayon just about held its own despite a reduction in the unit cost per pound.

December Rayon Imports Second Largest on Record

Imports of rayon yarn into the United States during December 1927 totalled 1,764,368 lbs., against 1,285,157 lbs. in November. The December importation was the second largest on record, being exceeded only in May 1927 when 1,785,538 lbs. were brought in.

The following table shows details released by the Dept. of Commerce:

	Pounds	Dollars
Rayon Waste—		
Germany	23,477	2,119
Canada	31,272	2,543
Australia	20,255	1,005
Total	75,004	5,667
Rayon Yarn—		
Austria	22,916	18,332
Belgium	109,788	79,905
France	180,308	140,348
Germany	330,015	323,944
Hungary	2,205	3,783
Italy	907,782	770,707
Netherlands	211,200	164,158
Switzerland	60	38
United Kingdom	94	276
Total	1,764,368	1,501,491
Rayon Yarn Made from Waste—		
Switzerland	20,115	13,279

Let Main Contract for Glanzstoff Plant

JOHNSON CITY, TENN.—Hughes Foulkrod Co., Pittsburgh, were successful bidders on the main contract for the general construction work on the American Glanzstoff Corp's first unit now under construction in Happy Valley, about three and one-half miles from Johnson City. Contract was let Jan. 24 at the Glanzstoff offices in New York. Amount is understood to be approximately one and one-half million dollars.

Hughes Foulkrod Co. handled the main contract on the first unit of the American Bemberg plant which adjoins the Glanzstoff site, and have been handling some minor contracts on the construction work of the second unit of the Bemberg plant and the initial work on the Glanzstoff. Coincident with the letting of the general contract, work was started on the new boulevard direct from Johnson City to the plants, which cuts the distance from six miles to only three and one-half. Construction work is to be completed by June 1.

Artificial Wool Experimenting in Germany

The Zellstoff-Fabric Waldhof A. G., Mannheim, Germany, manufacturer of cellulose and various kinds of wrapping paper, is experimenting in the manufacture of a substitute for wool-yarn. The basic material used in the experiments is cellulose. As yet no satisfactory results have been obtained but the proposition is optimistically regarded and it is hoped to eventually produce a satisfactory article.

New French Rayon Company Formed

It has recently been announced in the French Press that the Etablissements Kuhlmann, the Etablissements Agache Fils, and the Societe Dollfus-Mieg et Cie., have just started a company with a capital of 50,000,000 francs, for the manufacture of artificial silk. Among the patents the licenses for which this company has obtained are those of the Borvisk processes. Because of the Kuhlmann's dominant position in the French chemical group which is now completing an entente with the German manufacturers of artificial silk, it is said that this new company will become an adherent to this entente.

Canton Silk Market

Shipments of raw silk from Canton to the United States during September showed further declines as compared with the two preceding months and the corresponding month of 1926. Exports from Canton aggregated 6,179 bales of 106.6 lbs., of which 3,657 bales went to France, and 2,522 bales to the United States, in September, 1927, as compared with 4,673 bales in August, of which 860 went to Europe and 3,815 to the United States. These figures were compiled by the Foreign Silk Association of Canton. The records of the consulate general show exports of raw silk amounting to 256,744 lbs., as compared with 371,201 lbs. in the corresponding month of 1926, and 391,940 lbs. in August, 1927.

Stocks of raw silk in Canton were exceptionally low, reported to amount to only 2,000 bales, as against 6,000 bales on Sept. 30, 1926. During the month of September the small supplies

DOMESTIC RAYON PRICES

Denier	"A"	"B"	"C"
55	$2.45	$2.30	$2.20
65	2.35	2.15	2.05
75	2.50–2.55	2.30–2.35	2.20
80*	2.60	....	....
85	2.15	2.00	1.90
90	2.30	2.15	2.05
100	2.15	2.00	1.90
100*	2.25	....	....
120	1.80	1.70	1.60
125	1.75	1.65	....
130	1.70	1.60	1.50
140	1.60	1.50	1.40
150	1.50	1.45	1.35
150*	1.75	....	....
170	1.45	1.40	1.25
170*	1.70	....	....
200	1.45	1.40	1.25
200*	1.70	....	....
250	1.35	1.30	1.25
300	1.30	1.28	1.25
450	1.20–1.25	1.20	1.20
600	1.15–1.25	1.20	1.15
750	1.15	....	....
900	1.15–1.20	....	....

* Multi-filament.

CELANESE

Denier		Denier	
45	$4.00	170	$2.85
75	3.25	200	2.75
100	3.15	300	2.70
150	2.90		

BEMBERG (Cuprammonium)†

Denier	Filaments	Price
40	30	4.50
60	45	3.75
80	60	3.50
100	75	3.25
120	90	2.90
150	112	2.40
180	135	2.30
240	180	2.25
300	225	2.25

† All A grade; 2½ turns; unprepared in skein.

Dyed & Natural — Raw & Thrown

RAYON

Cops—Cones—Spools

Prompt—Efficient—Reliable

BERGER RA'YARN CO.

57 East 11th Street — Stuyvesant 2375 2376

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Woolmix
The Yarn of Adaptability
THOMAS HENRY & SONS
NASHVILLE — TENNESSEE
Makers of Yarn Since 1884

Meets All Competition

Send for Samples

Thomas Henry & Sons, Inc.

Nashville, Tennessee

LA SOIE DE CHATILLON

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RAYON (Viscose)

Daily Output 50,000 lbs.

"SERIS" Artificial Schappe — Artificial Straw

"CHATILAINE" Artificial Wool — Artificial Horsehair

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Commission winding of Rayon for Warp or Filling

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Regular Production, Standard Quality Uniformity in Finished Product

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Tapes, Braids and Bindings

NARROW WOVEN FABRICS

HOFFMAN CROWN MFG. CO.

312 Market St. SPINNING TAPES and SPINDLE BANDING Philadelphia, Pa.

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1115 Central Avenue — Pawtucket, R. I.

MERCERIZE. BLEACH AND DYE

Cotton Yarns, Tapes, Braids, Threads, Hosiery, Rubber Linings, etc., Coning, Tubing, Reeling, Bleaching and Dyeing Rayons a Specialty.

We Dye Sunfast and Indanthrene Shades on Cotton and Rayon

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Lawndale Band Works

CARD BRUSH CYLINDER COMB **BANDS** TWISTER WINDER SPOOLER SPINNING

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Where the "BEST BANDS" are made

MONARCH SILK CO.

MANUFACTURERS

Hosiery Tram and Combination Yarns

1424 NO. HOWARD ST., PHILADELPHIA

RUGGED CONSTRUCTION — SERVICEABLE

"COLUMBUS TAPE"

GEORGIA WEBBING & TAPE CO. COLUMBUS, GA.

BECK YARN CO.

FAST COLORS

FAST AND RELIABLE SERVICE

RAYON

for KNITTING and WEAVING

200 Greene St., New York

Dixon's Patent Reversible and Locking in Back Saddle with New Oiling Device, three Saddles in one, also Dixon's Patent Round Head Stirrup.

Send for samples to

DIXON LUBRICATING SADDLE CO., Bristol, R. I.

Rayon and Silk Yarns—Continued

available for export were not sufficient to meet the strong demand from France, so that inroads were made on 14/16 denier silk stocks in order to fill sales. Prices for the 13/15 denier, the staple European quality, have risen considerably and filatures are now turning their attention to this quality in preference to 14/16 silk. Of the latter, stocks in Canton are said not to exceed 500 bales, although daily arrivals from the silk districts help to swell the total. It should be pointed out in this connection that supplies in Canton do not at present amount to a normal month's shipments.

Reports received from the silk districts indicate a large sixth crop, roughly estimated at 14,000 bales of good quality.

According to the records of the Foreign Silk Association of Canton, waste silk exports during September aggregated 2,320 piculs of 133 1-3 lbs., of which 1,475 went forward to the United States, 750 to France and 95 to England. This compared with total exports of 994 piculs, during August, of which the United States took 600, the remainder going to France, states Vice-Consul Frederick W. Hinke, Canton.

Netherland Rayon Exports Increasing

Official Netherland statistics indicate a further increase of rayon exports during October, 1927, namely from 602 metric tons during September to 618 metric tons during October. The value of these exports aggregated 2,233,000 florins (one florin equals $0.402 United States currency), and 2,353,000 florins respectively. The corresponding figures for October, 1926, are 570 metric tons, valued at 2,084,000 florins, says G. Gorter, secretary to Commercial Attache, The Hague.

Incorporates to Convert Rayon and Other Textiles

SALISBURY, N. C.—The Rayon Converting Co., Inc., has been chartered here to buy, sell and otherwise deal in silk, rayon, cotton, etc., with authorized capital of $50,000; subscribed stock $300, by E. B. Marsh, F. B. Marsh and M. E. Marsh.

Spun Silk Quieter

Both Single and Ply Yarns Sought for Nearby Delivery

A moderate business was being transacted in spun silk last week with prices continuing to show the firmer tone lately noted. The season in broadcloths is now supposed to be pretty well completed as far as the spinners are concerned, but they reported a steady volume of inquiry for ply yarns, nevertheless. Buying of the ply yarns was all for nearby or spot deliveries. A fair interest in single yarns was also reported principally for use in tub silks which bid to outrank charmeuse as a user of 62-1 for spring. Prices follow:

60-2	$4.55	40-2	$4.25
50-2	4.40	62.1	3.55

Raw Silk Steady

Manufacturers Concerned Mainly With Nearby Deliveries

The raw silk market again presented a moderately firm appearance last week which was about in line with the expectations of the majority. Manufacturers would welcome in most cases a slightly higher level of prices but do not really expect such a development. At the same time no weakness is looked for because of the strong statistical position and the probability of another month of large consumption in January. Indications are now that mill deliveries will run above 50,000 bales and possibly may make a new record.

Manufacturer buying concerned itself mainly with nearby deliveries. Importers reported a good day-to-day demand which amounts in the end to a large aggregate. Early in the week one or two houses made some rather attractive offers for shipment which were taken rather quickly by dealers. The holidays in Canton gave the trade little opportunity to pick up any real cheap Canton silk. Prices held close to $4.00 a pound for the 14/16 with all the cheap resales apparently absorbed.

(90 days basis)

Japan Filature, Grand XX	13/15	$5 50
Japan Filature, Sp. Crack	13/15	5 25
Japan Filature, Crack XX	13/15	5 05
Japan Filature, XX	13/15	5 00
Japan Filature, Best X	13/15	4 95
Japan Filature, X	13/15	4 92½
Canton Filature, New Style	14/16	4 05
Tussah Filature, 8 cocoon		2 35

SUMMARY OF SILK CABLES

Saiyu-Yokohama	1310 Yen
Exchange at 3 m/s	47¾
Cost C. I. F. New York	$4.96

Transactions in Yokohama showed a good increase last week due to the slightly lower open market rates and the decline of ⅛ point in exchange. On the basis of 1300 Yen importers bought a large volume of silk over the first four or five days of the week. During this period sales were 8,000 bales, resulting in an advance of 10 Yen on Jan. 23. Buying eased off at this point with only 1,000 bales taken on Jan. 25, as exchange moved up again to 47¾. The heavier buying of the current week has put the market in a stronger position abroad and little in the way of lower prices are looked for. The Canton market has been closed due to the New Year holidays. Prices were slightly lower prior to the closing.

Hot Air Drying *Gives Flexibility*

HOT air recirculated through the material is the drying medium in all "HURRICANE" Textile Dryers.

The heating elements are in a separate compartment from the goods being dried. There is no danger of damage to the goods through direct contact with the heating elements.

By varying the amount of heating surface, the volume of air circulated, and the pressure of steam in the coils, the heating effect may be infinitely varied.

DRYERS

Cotton Stock — Wool and Rags — Skeins
Underwear — Towelling — Warps
Hosiery — Plush — Piece Goods
CONDITIONING MACHINES
CARBONIZING EQUIPMENTS

THE PHILADELPHIA DRYING MACHINERY CO.
Stokley St. above Westmoreland, Phila., Pa.
New England Office: 53 State St., Boston, Mass.

Southern Agents Carolina Specialty Co. Charlotte, N. C.

HURRICANE Ideal Drying Every Day

Canadian Agent C. M. Cudlip, Hamilton, Ont.

28

6½ Foot Cone Duster with Fan

This machine will open, dust and partly clean your wool preparatory to washing. It will be found satisfactory for cleaning card waste. It is a valuable addition to the picker room.

Any woolen or worsted mill can profitably use this Cone Duster.

Our catalog number 120 entitled "Dusters" will be mailed you upon request.

C. G. SARGENT'S SONS CORPORATION

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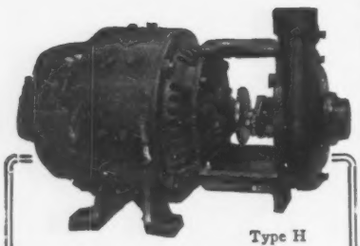
See also CONSOLIDATED TEXTILE CATALOG

Builders of Wool Washing and Drying Machines



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A close-coupled, single stage unit, with capacities ranging from 16 to 150 gallons per minute against heads up to 350 feet, or 150 lbs. pressure. Quality of same high-grade material and workmanship which characterizes all LECOURTENAY pumps.

Occupies minimum of floor space—requiring no sub-base or foundation other than suitable support for its weight. Runs quietly without vibration. **Send for Bulletin H-11—and other information regarding the complete LECOURTENAY line.**

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WOOL AND SUBSTITUTES

Colored Substitutes Making no Advance

Outlook Less Favorable Than for Whites—Little Recovery in Old Rag Values

BOSTON.—Recovered wools and their raw materials are quiet. The outlook for a large expansion of business is not very promising at the moment. The open winter has prevented a large retailing sale of overcoatings and stocks have piled up to such a degree that some of the mills who have already shown overcoating fabrics for next fall and winter have priced them on the same level as a year ago.

Although mills seem to be in need of stock they continue to press for lower prices and are successful in most cases. Light hoods, however, are going a little better, being sold at 21-22c if free from silk and as low as 20c with approximately 5% of silk. Fine light merinos are quiet and quoted to consumers at 14c free of black and whites and 13c mixed. There has recently been a larger movement in coarse light merino. Sales have been made at 6½c. Mixed blue knits are moving slowly at 14½c and navy blue knits at 16c. There is a moderate business doing in old mixed skirted khaki containing approximately 40% woolen, 40% worsted and 20% overcoating. White stocks are always in demand and this is true of the present time though high prices are difficult to maintain. White serges and flannels are quoted 38c; white softs at 40c and white knits at 42c.

Prices in the Dewsbury rag market are very steady. Quotations on sixty standard rags and clips show not a single change since December 1. The average price level of the market is however well below that of a year ago while on the other hand the wool market is quite a little higher. This situation is similar in both Boston and Dewsbury.

A generally good demand for white wastes is unabated. The call comes in from woolen mills, batt makers, felt and blanket manufacturers. The prices on the several materials depends in the main upon the fineness and whiteness or otherwise of the material required by the consumer. At the top of the list is fine white drawing lap at say $1.18; then roving and spinning at $1.08; garnetted choice single thread comes next around $1.03; then garnetted 2 ply fine white thread at say 93c; then there comes garnetted fine white hosiery and underwear clips at 85-90c; lower down in the scale price is the British white knit at about 65c and below that stripped foreign jazz clips around 55c.

Will Goods Open at Wool Cost?

Seems Inevitable for Virgin Wool Fabrics and Doubtful as to Overcoatings and Similar Heavy Cloth

BOSTON.

WOOLS continue active and although purchases are not in large amounts they are made by a considerable number of consumers so that the turn-over is satisfactory. Prices still point upward. A near wool famine is predicted by some observers of the market. In spite of the small stocks of foreign wools, imports are coming in slower than they were a year ago. The situation is most abnormal. There is more movement in scoured wools in the Boston market. There is larger trading activity on Summer Street than for several months past. Half-blood scoured wools are said to be almost completely cleaned up. Wool scouring plants are now in receipt of larger business. Prices on the scoured wools are moving upward not having shared in the grease wool advance during recent weeks.

The strong London situation has encouraged those who are bullish on the wool situation and who have yet wools to sell. Houses short of wool and short of contracts, and this covers a considerable percentage of the wool trade, have little basis upon which to place their enthusiasm which may work quite decisively against their attempts to buy cheap wool on the sheep's back in the West. Growers fully aware of the strong situation based on limited stocks of spot domestic and extreme difficulty in replenishing foreign wools except at very high prices are adopting a stiffer attitude making further acquisitions of wools on contract by eastern buyers very difficult. The general situation to date is shown in the following table which gives approximate percentage of wool placed under contract and prices paid for the same:

	Contracted	*Price*
Utah	85%	33-34c
Itaho	65%	35-36c
Montana	45%	37-40c
Wyoming	40%	35-37c
Nevada	40%	31-32c
Oregon	35%	32-33c

In California about 3,000,000 pounds have been sold and in Texas a similar amount. Little is heard about Arizona the earliest shearing State where operations commenced last week.

The outlook for heavy wool fabrics for next fall and winter looks unsatisfactory owing to the unusually open winter. Current overcoating business is said to be the worst for years with large retailers' stocks unsold. Some mills who are showing samples ahead of the official opening are naming prices on a par with January, 1927. This can hardly be explained by any reference to the raw material situation as it is at this time, for wool wastes and noils have had a similar price advance to that made by wools, but in the case of reworked wools and woolen rags and clips the current market is no higher than it was a year ago either in foreign or domestic materials. There is said to be a large carry-over of heavy garments in distributors' hands which will prevent any large buying for next fall.

Outlook for suitings is of course a little different and to the extent that these fabrics are made from virgin wools to that degree will an advance in prices estimated at around 7½% become necessary. The goods market is not likely to place any large business ahead but will hand out orders in such a manner as to keep manufacturers uncertain as to prospects hoping in this way to break prices. These tactics have been tried before and have been rather successful in recent years but it is unlikely that the goods market can put anything across this time with the wool situation at home and abroad so remarkably active and strong.

Wool and Substitute Quotations

(Corrected at close of business on Wednesday)

WOOL

Ohio, Pennsylvania and West Virginia

Fine delaine	.49—.50
Fine clothing	.39—.40
½ blood	.49—.50
¾ blood	.49—.50
¼ blood	.49—.50

California (Scoured Basis)

Northern, 12 mo.	1.05—1.08
Southern, 12 mo.	.90— .95

Texas (Scoured Basis)

Fine 12 mo.	1.12—1.15
Fine 8 mo.	1.05—1.10

Pulled—Eastern (Scoured Basis)

A-A	1.15—1.20
A-Super	1.03—1.05
B-Super	.90— .95
C-Super	.75— .80

Montana, Idaho and Wyoming (Scoured Basis)

Staple fine	1.15—1.18
Do. ½ bld.	1.05—1.10
Fine & fine medium	1.08—1.10
¾ blood	.95—1.00
¼ blood	.90— .92

Mohair—Domestic

Best combing	.70—.75
Best carding	.50—.55

Mohair—Foreign (In Bond)

Turkey Fair average	.43—.46
Cape Firsts	.42—.45

Foreign Clothing and Combing (In Bond)

Scoured Basis—	
Cape:	
Super 12 months	1.05—1.08
Super 10-12 months	.98—1.02
Australian:	
70s	1.12—1.15
64s	1.00—1.02
58—60s	.90— .92
Grease Basis—	
Montevideo:	
58-60s	.51—.52
56s	.48—.49
50s	.45—.46
Buenos Aires:	
48, 40-44s	.35—.36
58, 36—40s	.33—.34

Foreign Carpet (Grease Basis in Bond)

China: Combing No. 1	.26—.27
China Filling Fleece	.23—.24
Szechuen ass't	.24—.25
Cordova	.23—.24
Scotch Black Face	.25—.26
East India: Kandahar	.36—.38
Vlcan'r	.40—.44
Joria	.45—.50
Aleppo	.37—.39

SUBSTITUTES

Wool Waste

Lap—	
Fine white	1.17—1.20
Fine Colored	.90— .92
Thread White Worsted—	
Fine	.83— .87
½ blood	.73— .75
¾ blood	.68— .70
¼ blood	.55— .60
Thread Colored Worsted—	
Fine Two-ply	.33— .35
½ blood, Two-ply	.30— .33
¾ blood, Two-ply	.28— .30
¼ blood, Two-ply	.25— .28
Card—	
Fine white	.48— .52
Medium white	.30— .33

Old Woolen Rags

Merinos—	
Coarse light	7 — 7½
Fine dark	4½— 5
Fine light	14 —14½
Serges—	
Blue	6 — 7
Black	6 — 6½
Red	15 —15½
Knit—	
White	44 —45
Red	15 —16
Light hoods	21 —22
Worsteds—	
Light	7 — 7½
Blue	7½— 8
Black	6 — 6½

Wools Continue Advance

Pulled Wools Spurt Upward—Foreigns in Bond Step Higher

BOSTON.—The wool district is quieter but prices are very strong. "There seems to be a world-wide shortage of wools and without any manipulation on the part of the wool trade prices on domestic sorts are likely to go much higher." Fine staple territory has sold during the week at $1.15, fine and fine medium Montana in original bags at $1.08-$1.10 and Colorado and New Mexico wool of the French combing quality at $1.05. The wool situation is strong and a seller's market is in evidence. The wool trade inventory as of Jan. 5 disclosed total stocks of domestic grease wools at 39,234,000 lbs. as compared with 46,270,000 lbs. a year ago. The foreign wools in bond are in negligible quantity and U. S. imports are arriving very slowly being at this time 2,000,000 lbs. behind similar period last year. All kinds of wool are held on the street at the highest prices for months. The several grades of Ohio fleece are firm

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Wool—Continued

at 50c while as high as 52c was paid for a choice lot of ½ blood Ohio. Since the publication of the wool trade inventory there has been very considerable purchasing of wools by mill interests. Stocks of both domestic and foreign wools in this district are at the low point for years.

During the last few days a number of the foreign wools in bond have advanced in price. Australian 60s-64s have advanced 1c; New Zealand 40s-50s, 2c; 46s-48s, 2c; 44s-46s, 2c; 40s-44s, 2c; 36s-40s, 2c. The B A wools have advanced 1c per pound on first clip and 2c per pound on second clip wools. In the market for domestic wools the clothing qualities have advanced 1 to 2c per pound while the strictly combing wools registered another gain of 1 to 2c per clean pound. The pulled wools are very strong and the entire range has moved up about 3c per pound. Choice AA is now quoted $1.15-$1.20; fine A, $1.03-$1.08; choice white B, 90-95c; C super, 75-80c.

Importing houses are in rather a hard place. Foreign wools are too high to touch and the bulk of the foreign business being done at this time is by brokers acting on instructions from the larger organizations. Limited consignments from the Australasian and South American markets are arriving in Boston with further belated and restricted buying in these foreign centers.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston also imports at Philadelphia and New York for the week ended Jan. 21, based upon data compiled by the Market News Service of Bureau of Agriculture Economics, Department of Agriculture, are as follows, in lbs.:

	Week Ended Jan. 21	1928	1927
Domestic	791,000	6,623,000	4,950,000
Foreign	1,540,000	7,372,000	7,987,000
Total	2,331,000	13,995,000	12,937,000
IMPORTS AT PRINCIPAL PORTS			
Boston	1,540,000	7,372,000	7,987,000
Philadelphia ..	1,735,000	4,895,000	7,081,000
New York.....	1,546,000	5,627,000	4,601,000
Total	4,821,000	17,894,000	19,129,000

Pulled Wools Advancing

Scoured Wools and Noils Two-to-Three Cents Higher

PHILADELPHIA.—For several weeks grease wools, territory and fleece, registered advances while comparatively little change occurred in pulled and scoured and noils. The reverse is true at present, there having been little change in prices of territory and fleece this week while important advances have been apparent in pulled and scoured wools, these grades rising two or three cents as compared with last week, similar advances taking place in noils, which are one of the strongest features of the market at present, fine noils in particular being scarce at the higher price range quoted. Demand for all wools is good but slightly less excited than two or three weeks ago, manufacturers becoming more conservative at the higher price range and inclined to wait where possible before buying further lines. This is illustrated by the reports that dealers, in instances, are paying higher prices than manufacturers in order to replenish their stocks, indicating they believe these wools will reach considerably higher prices during the coming weeks, as they must secure several cents above the current range to make these purchases profitable.

Contracting Less Active

Contracting in the West has been less active, dealers being unwilling to operate further until prices there become stabilized, activity of recent weeks having caused a violent upturn of prices in territory sections, 40c having been paid in Montana and 42c as the top in Texas. Buying of new clips has also been curtailed in the West because most of choice clips are now under contract and a majority of eastern operators have contracts of sufficient size to give them more confidence in their position and to give them an opportunity of studying the market before placing further contracts.

Foreign markets continue to advance, leaving the difference in domestic wools and import costs of foreign wools as large as before the spurt in prices started. This factor and small stocks reported by dealers have been primary causes of the advance in the market although there is a larger volume of wools held speculatively than for more than a year, trading among dealers during recent weeks being named by many as one of the reasons for this upturn.

Territory Prices Unchanged

Territory staple wools are quoted at unchanged prices, fine being held at $1.15 and higher for choice and 90c for quarter blood. Fleece quarters have been sold at 50c to 51c, costing the buyer around 87 to 88c clean and 95c for three eighths. A sale of 75,000 lbs. of fine clothing was reported, bringing $1.03 to $1.05 clean, while half blood clothing out of fleece has been sold at 90c clean. Dealers' stocks of medium bright wools have been well cleaned out and remaining lots are strongly held, one quoting quarter blood Virginia at 53c, 2c higher than previous sale.

Pulled wools and noils are enjoying the most active period they have experienced for more than a year and prices are advancing too rapidly for manufacturers to keep abreast of the market, trading among dealers becoming more active than last week. Dealers quote pulled wools on the basis of $1.15 for AAs, $1.10 for fine As, $1.00 to $1.05; best B supers are quoted at 95c and sales between dealers have been reported at this level for high Bs; ordinary Bs are quoted at 88c to 90c, stained Bs at 85c; C supers are held at 80c, ordinary Cs at 75c, these prices representing advances of two to three cents since last week.

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Magnus Chemical Co. Moves to Garwood, N. J.

The Magnus Chemical Co. began operation in its new location in the Bell Terminal Building, Garwood, N. J., on Jan. 23. The necessary alterations to the building were completed Jan. 21. The company was organized in 1921 and began operations in Brooklyn, N. Y. William M. Campbell is president, David Blanchard, vice president, W. M. Garbe, treasurer, and D. C. Stanley, sales-manager.

The Magnus Chemical Co., with which is affiliated the Dif Corporation, is engaged in the manufacture and sale of cleaning compounds and materials. Magnus products are used in many kinds of industrial cleaning operations. The company makes many types of cleaners from a powdered hand soap to the highly specialized compounds for textile mills, dairies, laundries, metal working and silver plating plants.

The household or package goods part of the business is handled by the Dif Corporation. The well-known cleaners "Dif" and "Magnus" are manufactured and sold by this company through about 20,000 grocery stores.

Piedmont Chemists Meet

Section of American Association Hears Technical Papers and Plans Expansion

GREENSBORO, N. C.

MORE than 150 textile chemists and colorists representing the Piedmont Section of Virginia and the Carolinas, of the American Association of Textile Chemists and Colorists, gathered here Saturday night, Jan. 21, for their annual dinner meeting, and discussed various phases of their part in southern industries.

The gathering was presided over by H. A. Barnes, of Greensboro, chairman of the Piedmont district, and members of the association representing six southern States were in attendance.

One of the outstanding accomplishments of the conference was the appointment of a committee headed by J. D. Sandridge of Greensboro, to make a detailed survey of the entire Piedmont section to determine the number of men eligible for membership in the association. This will be done more closely to organize the local district. The committee will report its findings at a meeting to be held in April in Greenville, N. C.

Another move to bring about a better organized district was enacted in a motion to appoint a technical committee to receive and pass on the detailed matters that confront the association daily. This committee will be announced at a later date.

Among the papers read during the evening was that of "Methods of Testing Sulphonated Castor Oil for Determining the Fatty Content," by Albert H. Grimshaw, associate professor of dyeing, North Carolina State College. Discussions on this paper were led by H. M. Chase, of the Riverside & Dan River Cotton Mills, of Danville, Va., by R. M. Monarch, of the Pacific Mills, Lyman, S. C., and R. H. Southern, chemist of the Proximity Print Works, Greensboro.

"Some Foolproof Dyehouse Methods," was the subject of an interesting paper read by W. R. Smith, of Raleigh, of the United Chemical Products Co. A. T. Lomax, of Asheboro, and Tom Nuckolls, of Greenville, S. C., took part in the discussions on this paper.

"Dyeing and Finishing Rayon Yarns," was the subject of an interesting paper read by T. C. King, superintendent of dyeing, bleaching and finishing for the Cramerton Mills, Inc. Several men took part in discussion of this paper.

"Bleaching of Cotton-Piece Goods," was discussed in an interesting paper by J. T. Yates, of Concord. Discussing the subject with him were W. H. Woodhead, of Graniteville, S. C., and T. C. Robertson, of Salisbury. All of these papers took up their subjects comprehensively and were educational in scope.

Dye Notes from Britain

(*Special* TEXTILE WORLD)

At a recent meeting of Imperial Chemical Industries it was decided to authorize the directors to issue from time to time £6,580,000 of the unissued capital as cumulative preference shares. It was not intended to issue the whole or even a substantial block at the present time however.

The object of the authorization is to allow the company to issue preference shares against the preference shares of companies they are absorbing. The companies which have been

Miscellaneous Chemicals

Aluminum Sulp. com.	1 40	—	1 45
Iron Free	2 00	—	2 05
Alum, Ammonia Lmp.	3¾	—	3½
Potash, Lump	2¾	—	3¼
Ammoniac, Sal. white gr., dom.	5	—	5¼
Bleach powder, per 100 lb. works	2 00	—	2 50
Blue Stone	5	—	5¾
Calcium Arsenate	7	—	7½
Chlorine, Liq. Cylinders	5½	—	9
Tanks	4	—	4¼
Copperas, ton	13 00	—19	00
Cream of Tartar	28	—	29
Epsom Salts, 100 lb.	1 25	—	1 90
Formaldehyde Spot	9½	—	10
Glauber Salts, 100 lb.	75	—	1 15
Glycerine (C. P.) bbls.	20	—	20½
Cans	21½	—	22
Yellow Crude	20	—	20½
Hydrosulphite Conc.	24	—	25
Lead—Brown acetate	12	—	12½
White (crystals)	13	—	13½
Lime, acetate, 100 lb.	3 50	—	...
Potassium—Bichromate	8¼	—	8⅝
Chlorate crystals	7½	—	9
Permangan, tech.	14½	—	15
Sodium acetate	4½	—	5
Bichromate	6½	—	6¾
Bisulphite, 35%	1 50	—	1 75
Nitrite	8	—	8½
Phosphate	3¼	—	4
Prussiate, yellow	12	—	12½
Sulphide, 60% fused	3¾	—	4
30% crystals	2¼	—	2½
Tartar emetic, tech.	31	—	...
Tin—Crystals	41	—	41½
Bichloride, 50 deg.	17¼	—	17½
Oxide, bbls.	62	—	63
Zinc Dust	9	—	9½

Acids

Acetic, 28% per 100 lb.	3 37½	—	3 62½
Citric crystals	44½	—	45½
Formic, 90%	11	—	12
Lactic, 22%	5½	—	7
Muriatic, 18 deg. per 100 lb. in tank cars	95	—	1 00
Nitric, 36@42 deg. per 100 lb.	5 00	—	6 75
Oxalic	11	—	12
Sulphuric, 66 deg. per ton in tank cars	15 00	—16	00
Tartaric	36	—	39

Alkalies

Ammonia, Aqua, 26 deg.	2¾	—	3¼
Borax, Crys. bbls.	4½	—	...
Potash, carbonate, 80-85%	5¾	—	6½
Caustic, 88-92%	7½	—	8
Soda Ash, 58% light	1 37½	—	2 44
Contract, 100 lb.	1 32½	—	1 57½
Bicarb, per 100 lbs.	1 90	—	2 25
Caustic, 76% per 100 lb.	3 10	—	3 90
Contract, 100 lb.	3 00	—	...
Sal. 100 lb.	90	—	1 00

Natural Dyes and Tannins

Fustic: Crystals	18	—	22
Liquid, 51 deg.	9	—	10
Gambier, liquid	11	—	11½
Hematine, crystals	14	—	18
Hypernic Ext.—51 deg.	11	—	15
Indigo—Madras	1 30	—	...
Logwood Extract, liq. 51 deg.	8	—	9
Crystals	14	—	18
Osage Orange, Extract, 51 deg.	7	—	7¼
Quercitron extract, 51 deg.	6	—	6½
Sumac, Ext. dom., ref., 51 deg.	6	—	7
Extract, stainless	11	—	11½
Tannic Acid, tech.	35	—	40

Dyestuffs and Intermediaries

Alpha Napthylamine	34	—	36
Aniline Oil	15	—	16¼
Salt	24	—	25
Beta Naphthol sublimed	55	—	60
Technical	22	—	24
Dimethylaniline	31	—	32
Metaphenylene Diamine	85	—	...
Paranitraniline	52	—	53

Oils and Soaps

Castor Oil, No. 3	12	—	13½
Olive Oil, denatured, gal.	1 70	—	1 75
Foots	9½	—	10
Red Oil, lb.	8½	—	10
Stearic Acid double pressed	11	—	12
Turkey Red Oil, 50%	10	—	12

Adhesive and Sizing Materials

Albumen, blood domestic	45	—	55
Dextrine-Potato	8	—	9
Corn, bags 100 lb.	3 77	—	4 04
Gum, British, 100 lb.	4 02	—	4 29
Sago flour	3½	—	4
Starch, corn, 100 lb.	2 97	—	3 22
Potato	6½	—	7½
Rice	9	—	9½
Wheat	7	—	9
Tapioca flour	3½	—	5½

Coal Tar Dyes

Direct Colors—			
Black (H-acid)	28	—	52
Black Columbia FF.	50	—	60
Blue, 2 B.	24	—	32
Blue sky, ordinary	45	—	90
Blue, 2 GL.	1 70	—	2 50
Blue, 4 GL.	1 60	—	...
Blue Sky, FF.	60	—	1 20
Blue, Fast RL.	1 90	—	...
Blue, Solamine	2 00	—	...
Benzo Azurine	90	—	80
Brown, C.	40	—	60
Brown, M.	70	—	90
Brown, Congo G.	85	—	...
Brown, Congo R.	80	—	...
Green, B.	60	—	90
Green, G.	65	—	90
Orange, Congo	60	—	...
Orange, Fast S.	1 80	—	...
Red, Fast F.	80	—	90
Red, Congo	40	—	50
Benzo Purpurine, 4 B.	40	—	60
Benzo Purpurine, 10 B.	1 25	—	1 50
Scarlet, 4 BA.	1 50	—	...
Scarlet, 4 BS.	1 45	—	...
Scarlet, 8 BS.	1 25	—	...
Scarlet, Diamine B.	1 65	—	...
Violet N.	1 10	—	1 20
Yellow chrysophenine	50	—	1 50
Yellow, Stillbene	90	—	95
Developing Colors—			
Black, BH	40	—	60
Black Zambesi	...	—	90
Bordeaux, Dev.	2 00	—	...
Orange, developed	2 50	—	...
Primuline	1 00	—	1 15
Red, Dev. 7 BL.	2 50	—	...
Scarlet, Dev.	2 50	—	...
Sulphur Colors—			
Black	20	—	31
Blue, cadet	90	—	95
Blue, navy	50	—	60
Brown	37	—	60
Green	85	—	1 50
Green, olive	25	—	50
Yellow	45	—	1 40
Basic Colors—			
Auramine	90	—	1 30
Bismark Brown	50	—	60
Chrysoidine	40	—	65
Fuschine crystals	1 50	—	1 75
Malachite green	1 35	—	...
Methylene blue	1 00	—	1 40
Methyl violet	90	—	1 15
Rhodamine B. excone.	5 00	—	6 00
Safranine	1 45	—	1 60
Victoria Blue B.	3 10	—	...
Acid Colors—			
Naphthol blue blk.	47	—	60
Napthlamine black, 4 B.	50	—	55
Alizarine saphirol	2 35	—	4 00
Alkali blue	3 25	—	3 50
Indigotine	80	—	1 30
Induline (water soluble)	75	—	80
Soluble Blue	3 00	—	3 75
Sulphoneyanine	1 00	—	...
Sulphone Blue R.	60	—	95
Patent Blue A.	2 50	—	...
Rescorcin brown	80	—	90
Guinea green	1 00	—	2 20
Wool green S.	84	—	1 70
Orange II	27	—	...
Orange GG crys.	60	—	...
Acid Fuchsine	80	—	90
Azo eosine G.	65	—	82
Crocein scarlet	1 15	—	1 90
Fast red A.	50	—	65
Azo yellow	1 35	—	1 40
F. Light Yellow, 2 G.	1 40	—	...
F. Light Yellow, 3 G.	1 50	—	...
Naphthol, yellow	1 35	—	1 40
Chrome Colors—			
Aliz, Black B.	1 80	—	...
Diamond Black PV.	70	—	...
Chrome Blue Black	45	—	...
Chrome Brown	60	—	1 80
Chrome Green	75	—	1 50
Chrome Yellow	45	—	1 10
Indigo—			
Synthetic 20% paste.	15	—	17

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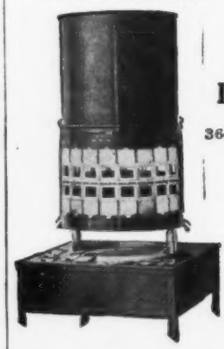

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See also CONSOLIDATED TEXTILE CATALOG

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See also CONSOLIDATED TEXTILE CATALOG

Dyes and Chemicals—Continued

acquired since the formation of the Imperial Chemical Industries Ltd. were the Cassel Cyanide Co., the Union Acid Co., Oliver Wilkins and Co., and Casebourne and Co.

Rumor is rife as to further likely absorptions and it has been suggested among others that British Alizarine will be taken over. Later indications however would seem to point to the probable amalgamation of British Alizarine with the United Turkey Red Co., rather than with Imperial Chemical Industries Ltd.

* * *

Details of the production of dyestuffs in Great Britain in 1926 have just been issued. The total for the year, one in which conditions were worsened by the coal strike, was 30,297,000 lbs. against 32,693,402 lbs. in 1925 and 33,242,704 lbs. in 1924.

DYESTUFFS PRODUCTION BY CLASSES

	1926 Lbs.	1925 Lbs.
Direct cotton colors	4,180,508	4,940,838
Acid wool colors	5,217,259	4,498,653
Chrome and mordant colors (incl. alizarine)	6,972,112	6,256,276
Basic colors	1,308,813	1,710,556
Sulphur colors	4,636,930	6,225,791
Vat colors (incl. indigo)	6,237,703	7,295,769
Dyestuffs for lace making	947,933	1,014,334
Oil, spirit and wax and misc. colors	795,742	751,185
Total	30,297,000	32,693,402

DYESTUFFS PRODUCTION BY COLORS

	1926 Lbs.	1925 Lbs.
Blacks	8,077,905	9,148,176
Blues	8,357,085	9,922,583
Browns	1,766,446	2,137,360
Greens	1,138,963	839,903
Oranges	1,327,581	1,463,725
Reds	6,682,246	6,220,050
Violets	904,289	770,476
Yellows	2,042,485	2,191,129
Total	30,297,000	32,693,402

Bulletin Describes Newport Sulphur Brown CTG Conc.

A bulletin issued by the Newport Chemical Works, Inc., Passaic, N. J., contains description, dyed samples and dyeing instructions for Newport Sulphur Brown CTG Conc. This color is described as follows:

"Newport Sulphur Brown CTG Conc. finds extensive use for the dyeing of cotton in all stages of manufacture in all types of machines. It is also well adapted for dyeing rayon. It is readily soluble, levels well and possesses very good general fastness properties. It is recommended as a base for the production of tan and brown shades. It is not dischargeable."

New Bedford Novelty Fabrics Corp., New Bedford, Mass., has been organized with $50,000 capital, with the following officers: Tobey E. Mendes, president; Raymond Hall, vice-president; Samuel Granby, treasurer and clerk.

Business News

O. E. Kearney Now with Poe Piping & Heating Co.

O. E. Kearney, formerly manager of the heating and piping department at the Charlotte, N. C. office of Grinnell Co., has resigned to accept a similar position with the Poe Piping & Heating Co. of Greenville, S. C.

W. D. Shields Now with Butterworth Organization

H. W. Butterworth & Sons Co., Philadelphia, Pa., manufacturers of textile finishing machinery, have added another man to their southern force. He is W. D. Shields, who brings with him a knowledge of dyes and the dyeing of many varieties of fabrics. He will operate from Charlotte, N. C., where the southern office is located in the Johnston Building.

Mr. Shields has specialized on the dyeing of hosiery, having been connected with the Durham Hosiery Mills. He was also with the Erwin Cotton Mills at Durham, N. C., and is a graduate of the North Carolina State College, Class of 1919.

Following the Butterworth policy, Mr. Shields's knowledge of finishing, dyes and dyeing is now available in the textile industry.

Hegeman Establishes Rayon Consulting Department

Joseph F. Hegeman, importer of textile machinery, of 342 Madison Avenue, New York, announces that, owing to the increasing interest and activity in rayon, both in yarn and finished product, he has deemed it necessary to provide for expert advice pertaining to rayon. He, therefore, has opened a special department for consulting, contracting and organizing problems in connection with rayon, from the raw material to the finished product. C. Dreymann, chemical engineer and rayon specialist, who has had a wide experience both in this country and abroad, is now affiliated with Joseph F. Hegeman and is in charge of this new department. Mr. Dreymann was recently with the Skenandoa Rayon Corp., Utica, N. Y.

The firm's sales engineer, Tom Frusher, Jr., is abroad attending to current business matters.

Day & Zimmerman Part of Big Engineering Merger

The largest engineering and construction company in this country has been organized in Philadelphia, according to a statement issued by Arthur W. Thompson, president of the United Gas Improvement Co. "Four firms, widely known in this and other countries, have combined their interests and organized the United Engineers and Constructors Inc.," said Mr. Thompson. "These companies are The U. G. I. Contracting Co., Philadelphia, the Public Service Production Co., Newark, Dwight P. Robinson & Co., Inc., New York, and Day & Zimmermann Engineering & Construction Co., Philadelphia. Head-

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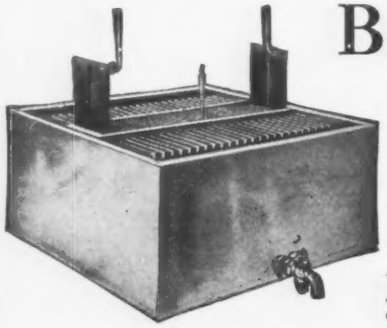

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Red Oil Olive Oil
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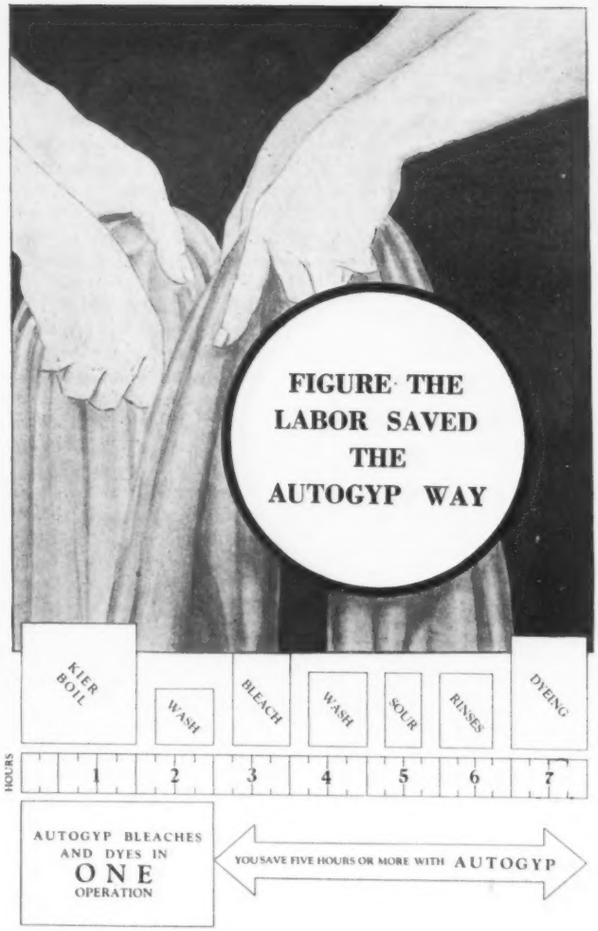

Instead of seven or more distinct operations, AUTOGYP bleaches and dyes to a definite shade in

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quarters of the new company will be in Philadelphia, with offices in New York, Newark, Chicago, Los Angeles, Atlanta, Houston, Pittsburgh, Montreal, Buenos Aires and Rio de Janeiro."

Dwight P. Robinson is president of the company. The directors are Arthur W. Thompson, president, The United Gas Improvement Co., chairman; Dwight P. Robinson; Thomas N. McCarter, president, Public Service Corp. of New Jersey; Samuel T. Bodine, chairman, Board of Directors, The United Gas Improvement Co.; Paul Thompson, a vice president of The United Gas Improvement Co. and president of the Philadelphia Gas Works Co., and John E. Zimmermann, president of Day & Zimmermann, Inc.

The new company is launched with contracts in hand amounting to more than $100,000,000.

Hinde & Dauch Acquire Seven Additional Plants

President Sidney Frohman of the Hinde & Dauch Paper Co., Sandusky, O., has announced the successful conclusion of negotiations which his company has been conducting, during the past year, for the acquisition of seven additional plants in the East, the Middle West and Canada.

The plants thus added to the present Hinde & Dauch properties are those of the J. M. Raffel Co. at Baltimore, Md., and the Thompson & Norris Co., with factories in Brooklyn, N. Y.; Boston, Mass.; Toronto, Ont.; and Montreal, Que.; and a large straw paper mill and box factory at Brookville, Ind. Title to these properties passes to Hinde & Dauch interests during this month.

The acquisition of these added facilities extends the operations of the Hinde & Dauch interests from the Missouri River to Boston Bay, the Chesapeake and the St. Lawrence, and will increase the output of H & D manufactured products by fully 30%. As a result of this purchase, the Hinde & Dauch interests now have box factories located at Boston, Brooklyn, Philadelphia, Baltimore; Montreal and Toronto, Canada; Cleveland and Sandusky, O.; Muncie, Ind., and Kansas City, Kan. These plants will be supplied by the company's paper mills situated at Gloucester, N. J.; Watertown, N. Y.; Toronto and Trenton, Ont.; Sandusky and Delphos, O.; Muncie and Brookville, Ind.; and Fort Madison, Iowa. With the addition of the company's material-grading plant in Philadelphia, H & D facilities now include 28 distinct manufacturing units, situated in nine States and two Canadian provinces.

Beginning business forty years ago, in a small rented paper mill, the Hinde & Dauch Paper Co. has grown steadily to its present international proportions.

Timken Has Progressive Plans for Expansion

An announcement has recently been made by the officials of the Timken Roller Bearing Co. that an expenditure of $4,000,000 to be devoted to increasing the production facilities of the company has been authorized for the coming year. The greater part of this expansion program concerns the company's plant at Canton, Ohio, where both the steel mill and the bearing manufacturing plant proper will be considerably enlarged. Among other features a new substation of greater kilowatt capacity will be built for supplying electric power for both the steel mill and the factory. Some idea of the magnitude of the expansion may be gained from the fact that the contracts for steel construction alone amount to $300,000 or more.

This enlargement of the company's facilities has been rendered necessary by the increase in business which marked the end of the past year, and by the expectation of still greater increase in 1928. Business in the various industrial fields in which the bearings have become established, has decidedly been a determining factor.

The year was marked by the successful application of the type of bearing developed for railway service to 127 passenger cars on the Chicago, Milwaukee and St. Paul R. R. Similar applications were made not only on many other steam roads, but to various types of self-propelled cars on different city and interurban lines throughout the country.

Against Misbranding Fabrics

WASHINGTON, D. C.—The Federal Trade Commission has held as a result of the trade practice conference of the shirting fabrics trade December 10 in New York City that misbranding of fabrics and discrimination resulting from selling one customer f. o. b. mill and another on the basis of free delivery are unfair methods of competition. Two other rules condemning piracy of styles and providing for the discontinuance of free sample cards were not approved by the Commission as it concluded that it could not undertake to enforce them. This does not mean, it was explained, that these rules have been actually disapproved by the Commission or that it would not, in a proper case, undertake to enforce them. It means simply that the Commission has not deemed it advisable to take a position that would preclude entire freedom of action in reference to any state of facts that might be presented in the future. The rules affirmatively approved by the Commission will become effective February 9. William E. Humphrey, chairman of the commission, presided at the New York conference. He explained to the representatives of the trade there that by voluntary action they could accomplish more in an hour or two towards wiping out unfair practices than could be accomplished in two or three years by the Commission in prosecuting individual offenders. The proposed rules were unanimously adopted by the conference, except for one vote cast in opposition to discontinuing the practice of giving away free sample cards.

Royle & Pilkington Co., Mt. Holly, N. J. It is reported this concern, manufacturers of upholstery goods, tapestries and draperies, having an equipment of approximately 115 looms, have closed this plant.

Obituary

Arthur Fletcher Whitin

Arthur Fletcher Whitin, treasurer of the Whitinsville Spinning Ring Co., Whitinsville, Mass., and of Whitin Bros., Inc., operating cotton mills in that town and Saundersville, died at his residence in Whitinsville, last Thursday after an illness of only two days. Mr. Whitin was born in Whitinsville in 1846, the son of Charles Pinckney and Sarah J. (Halliday) Whitin, and the grandson of Col. Paul Whitin, the founder of Whitinsville and one of the country's pioneer cotton manufacturers. He had always taken an active interest in the affairs of his native town, had held many town offices, and had been a member of the school committee for 33 years; he also served one term in the Massachusetts Senate. He was vice president and director of the Whitinsville National Bank and a trustee of the Whitinsville Savings Bank. Funeral services were held Thursday afternoon at his late residence.

George Clarke Hinckley

George Clarke Hinckley, cotton yarn and cloth broker, Providence, R. I., and one of the founders and a former secretary of the Southern New England Textile Club, died last week at a private hospital in New York City after an illness of several weeks. A native of Providence, Mr. Hinckley became identified with textile concerns in Rhode Island shortly after his graduation from Brown University, and during the greater part of his active career, he represented textile interests in financial and selling capacities. For the past five years he had conducted a textile brokerage business with offices in the Grosvenor Building. Among concerns which he was connected with were the Naushon Co. of Valley Falls, Tilton Mills of Valley Falls, Bristol Mfg. Co. of New Bedford, Mass., American Silk Spinning Co. of Providence, and Jenckes Spinning Co., now a branch of the Manville-Jenckes Co. He served as secretary of the Southern New England Textile Club for two years.

Allen H. Moore

Allen H. Moore, 62 years old, for many years officially connected with the General Electric Co., Schenectady, N. Y., died last week at his home in Albany after a long illness. Until six months ago he served as chairman of the committee on standardization and also the committee on mechanical design when ill health forced his retirement.

John Hawthorne

John Hawthorne, for many years a prominent figure in the textile industry at Amsterdam, N. Y., died at the Amsterdam City Hospital after a brief illness. He was 92 years old and retired from active duty a score of years ago after serving as superintendent of the picking department of the mills of John K. Stewart & Sons for more than 20 years. He is survived by a daughter.

L. H. A. Schwartz

L. H. A. Schwartz, founder of L. H. A. Schwartz & Co., importers of cotton and machinery, Boston, Mass., who retired from active business some ten years ago, died in Wiesbaden, Germany, last week at the age of 79 years. Mr. Schwartz was born in Bocholt, Germany, and after learning the cotton manufacturing business came to this country as a young man, and was successively agent and superintendent of several southern mills. About 1900 he became associated with the late H. G. McKerrow as importers of textile machinery under the title Schwartz & McKerrow. A few years later he retired from this firm and founded L. H. A. Schwartz & Co., representing A. Monfort, M-Gladbach, Paul Klug & Co., and several other German machinery manufacturers, as well as importing Egyptian, China and India cottons. He was the inventor of the Schwartz electric cloth guider. Since his retirement from active business he had traveled extensively although maintaining a residence in Brookline, Mass. He is survived by his widow.

Nicholas E. Devereux

Nicholas E. Devereux, president of the Oneita Knitting Mills and Skenandoa Cotton Co., Utica, N. Y., and officer and director in several other textile manufactories, died Tuesday at his home after a brief illness of heart disease. He was born in Ellicottville, Cattaraugus county, N. Y., April 28, 1850 and lived in Utica since he was 19. He studied civil engineering in Seton College and Brooklyn Polytechnic Institute, became a machinist in the Remington Arms Co., Ilion, during the Franco-Prussian war, and then was bank clerk. In April, 1874, he went into business with John B. Wild, as Wild & Devereux, knit goods, employing 30 hands. This grew into a bigger plant in 1881 and in 1893 became the Oneita Knitting Mills. In 1901 the company built a large yarn mill, which had 25,000 spindles and employed 1,500 hands. Mr. Devereux had been president since 1900. Mr. Devereux was also a director of the Skenandoa Cotton Co., and was its treasurer and president for years. He was director of Skenandoa Rayon Corp. He was active in many of the social and cultural bodies of Utica. His widow survives him with four sons and a daughter. Nicholas Edward, Jr., is secretary of the Oneita Knitting Mills.

Joseph J. Farrell

Joseph J. Farrell, for many years bookkeeper for the Oneida Bleachery, Utica, N. Y., died at his home on Jan. 17 after a long illness. He was a member of Utica Lodge of Elks. Surviving are five sisters.

Bids on Army Goods

(*Continued from page 28*)

four, 17.98c, item five, 22.95c, item six, 16.8c per yd.

Turner Halsey Co., New York, item three, 14.7c per yd.; Prince-Lauton Corp., New York, item one, 18.5 per yd., item two, 23.25c, item three, 15.5c per yd.; Sego Trading Co., Red Bank, N. J., bidding on entire quantity only, item one, 19.44c, item two, 28.44c per yd.; Cone Export & Commission Co., New York, on sample, item four, 17.76c per yd., item five, 22.2c per yd.; George Wood Sons Co., Philadelphia, item one, 17.24c per yd., item two, 21.87c per yd., item three, 15.87c per yd.

It was also announced by officers of the depot that Batavia Mills, New York, had been awarded contract to furnish 100,000 woven tubular black silk scarfs, on which bids were recently opened. This concern submitted a bid of 16.99c on this item.

The TEXTILE CLEARING HOUSE

Men Wanted

WANTED

Fancy Woolen Designer: Experienced man with initiative, qualified to assume full responsibility of Designing Department in **High Grade Woolen Mill.** Management offers a **Good Opportunity** to man who can demonstrate **Real Style Ability and Produce Results.**
State full particulars.

Address Adv. 92, Textile World,
334 Fourth Ave., New York

Wanted Experienced all round Dyer on Skein work for Rayon, Cotton & Worsted, must be fast and good at matching colors and show good winding results. Give full detail of your experience and references and salary wanted, good opportunity for right man.

Address Adv. 79, Textile World,
334 Fourth Ave., New York.

WANTED

Individual or firm to sell production of full fashioned ladies' 45 gauge, picot edge; also take financial interest.

Address Adv. 81, Textile World,
334 Fourth Ave., New York.

SALESMAN WANTED

for Textile and Laundry Specialty. Apply by letter only with full particulars including salary required, to—

I. P. D., Suite 601, Prudence Bldg.,
331 Madison Ave., New York.

Salesmen Wanted

Manufacturer offers a splendid opportunity to one or two men who have successfully sold Dyestuffs, Chemicals, and related Specialties. Salary and Commission. Men without experience need not apply. State full particulars.

Address Adv. 96, Textile World,
334 Fourth Ave, New York

WANTED

Experienced Spinner for Worsted Yarns.

Address Adv. 97, Textile World,
334 Fourth Ave., New York.

Missing Persons

Anyone knowing the whereabouts of William J. Mahoney (or Maloney), age 58, height 5 ft. 4 in., weight 140 lbs., white hair and moustache, please communicate with

G. A. MACK,
113 Dewey Ave., Pittsfield, Mass.

Situations Wanted

Manufacturers who are in need of superintendents or overseers for any department of mill work may learn of suitable men upon application by mail or telephone to C. T. DONLEVY, care Textile World, 65 Franklin Street, Boston, Mass.

SUPT. KNITTING MILL OR FOREMAN CUTTING & FINISHING. Position wanted by man 50 yrs. of age, American, married. Worked on half hose, cotton & woolen underwear, etc. Familiar with S&W, Tompkins and Cooper machines. Good references.
O. B. 1060, Textile World, Boston, Mass.

SUPT. OR MANAGER WOOLEN MILL. Position wanted by man 50 yrs. of age, English-American. Worked on woolen men's wear, cap cloth, smoking jacket cloth, cloakings, overcoatings, boys' suitings, etc. Familiar with all makes machinery used in wln. mill. A No. 1 recommendations.
O. B. 481, Textile World, Boston, Mass.

Herbert Walmsley New Sec.-Treas. of N. E. Yarn Spinners' Association

BOSTON, Jan. 24.—Herbert Walmsley of New York was elected secretary-treasurer of the New England Yarn Spinners' Association at its meeting held here this afternoon. Mr. Walmsley, who is well known among New England cotton manufacturers succeeds Henry Otte, who resigned recently.

Conditions in the industry, particularly as they apply to the yarn business, were discussed. Meetings will be held in the future on the third Monday of each month at the Providence headquarters in the Grosvenor building.

Mr. Walmsley has been in business as a cotton broker in New York during the past three years. Previous to that time he was in charge of the cotton and fabric department of Fisk Rubber Company for a number of years and before accepting that position was assitant to the general superintendent at Dartmouth mills, New Bedford.

New Hemp Fiber Processing Company in Southern California

The Imperial Linen Products Corp., San Diego, Calif., is constructing a plant in the Imperial Valley for the machining and processing of hemp. Use is made of the cleaned and refined fiber and the straw which is a by-product.

The decorticating machinery used was designed by Karl Wessel and when recently tested in St. Paul, Minn., turned out 1,500 lbs. of clean fiber per hour. The hemp plant grows to maturity in 90 to 120 days in the Imperial Valley. The products to which the fiber is adaptable are fine linens, fishing line, cobblers' thread, sails, tarpaulins, twine, rope and in the manufacture of rugs and carpets.

Alfred Stahel, Jr., is president and fiscal agent of this new company. He is also president of the Southern California Securities Co. Karl Wessel, formerly of the Klearflax Linen Rug Co., is vice-president and general manager. J. H. Zitt is treasurer. E. K. Cormack is secretary. The directors include Claus Spreckels, A. G. Brown, C. A. Shaffer, Dempster McKee and Marston and Ruth F. Harding.

Confer on Part Wool

A special meeting of the Labeling Committee of The Associated Knit Underwear Manufacturers of America was held Thursday noon at the Yale Club, Secretary Roy A. Cheney has announced. The session was called for the purpose of hearing a pre-convention report of the work being done by the organization's Research Associate, Charles Hamlin, in conjunction with the Bureau of Standards at Washington, to determine the correct percentage of wool which must be in a garment as a prerequisite to the garment's bearing the part-wool label.

COMMISSION & CONTRACT WORK

Silk, Cotton, Worsted, Artificial Silk, Linen, and Novelty Yarns, Twisting, Doubling, Reeling, Cops, Cones, Tubes, and Skeins, Winding in every form, single and multiple.

WINDING?

Telephone
Trenton, N. J., 4308

SCIENTIFIC TEXTILE CO.
Morrisville, Bucks Co., Pa.

WANTED

Commission weaving by small plant equipped with 10 56" 4 x 4 box, 16 harness looms and cotton warp preparation machinery.

Address Adv. 77, Textile World,
334 Fourth Ave., New York.

WORSTED YARNS

A well connected firm of selling agents wish to secure the representation of a mill equipped to supply the demands of the weavers on white and mixture yarns.

Address Adv. 93, Textile World,
334 Fourth Ave., New York.

For Your Convenience

TEXTILE WORLD
334-4th Avenue,
New York, N. Y.

Gentlemen:—

I sure would like to have a complete file of TEXTILE WORLD to keep at my home. Enclosed please find $2.00 in full payment for the next 26 issues which please send to my home address as follows:

Name .....
Street .....
City .....State .....
I am.....with.....Company
Key FYC

Situations Wanted

Manufacturers who are in need of superintendents or overseers for any department of mill work may learn of suitable men upon application by mail or telephone to C. T. DONLEVY, care Textile World, 65 Franklin Street, Boston, Mass.

CHEMIST OR SUPERVISION WORK ON RAYON. Position wanted by man 38 yrs. of age, American, married. Familiar with all makes of machinery used in rayon production also all types used in manufacture of chemicals. A No. 1 recommendations.
O. B. 174, Textile World, Boston, Mass.

SUPT. OF UNION CASSIMERE MILL. Position wanted by man 47 yrs. of age, American, married. Worked on ¾ cotton warps, and 6/4 worsteds. Familiar with all American makes of machinery. Good recommendations.
O. B. 182, Textile World, Boston, Mass.

OVERSEER WEAVING WLN. OR WST. MILL. Position wanted by man 49 yrs. of age, English, married. Worked on all kinds woolens and worsteds. Familiar with C&K and Draper looms. Good references.
O. B. 278, Textile World, Boston, Mass.

OVERSEER WEAVING WLN. MILL. Position wanted by man 49 yrs. of age, American, married. Worked on cassimeres, plaid back overcoatings, etc. Familiar with C&K looms. Good references.
O. B. 306, Textile World, Boston, Mass.

OVERSEER DYEING. Position wanted by man 45 yrs. of age, American, married. Worked on wool and cotton stock, cotton and worsted skeins for weaving, knitting and glazing, piece dyeing on corduroys, plushes, velours, mohair, men's wear, ladies' wear, etc. Familiar with Klauder-Weldon Delahunty, Hussong and Franklin machines. First class recommendations.
O. B. 316, Textile World, Boston, Mass.

OVERSEER BURLING AND MENDING. Position wanted by man 46 yrs. of age, Scotch, married. Worked on all kinds of woolens and worsteds, velours, etc. Good recommendations.
O. B. 370, Textile World, Boston, Mass.

OVERSEER COTTON WEAVING OR SECOND HAND. Position wanted by man 28 yrs. of age, Canadian, married. Worked on lenos, plain and fancy. Familiar with Draper, Stafford and Crompton looms. Good recommendations.
O. B. 532, Textile World, Boston, Mass.

OVERSEER WLN. or WST. FINISHING. Position wanted by man 44 yrs. of age, American, married. Worked on all kinds of woolens and worsteds, anything from loom to case. Familiar with all makes machinery. Good recommendations.
O. B. 580, Textile World, Boston, Mass.

OVERSEER WLN. OR WST. FINISHING. Position wanted by man 36 yrs. of age, American, married. Worked on all kinds woolens & worsteds. Familiar with all finishing room machinery. Good references.
O. B. 606, Textile World, Boston, Mass.

GEN. MGR., ASST. GEN. MGR. OR PRODUCTION MGR. IN HOSIERY MILL. Position wanted by man 29 yrs. of age, American, married. Worked on seamless half hose, full fashioned ladies' hose. Familiar with Hilscher & Reading full fashioned machines. Good recommendations.
O. B. 612, Textile World, Boston, Mass.

SUPERINTENDENT WOOLEN MILL, ASST. SUPT. OR SALESMAN. Position wanted by man 27 yrs. of age, American, single. Worked on satinets and low grade woolens. Familiar with practically all woolen machinery. Good recommendations.
O. B. 618, Textile World, Boston, Mass.

OVERSEER RING SPINNING, SPOOLING, WARPING, etc. Position wanted by man 34 yrs. of age, American, married. Worked on practically all kinds of machinery used in spinning, spooling, warping, etc. Good references.
O. B. 790, Textile World, Boston, Mass.

OVERSEER WLN. OR WST. WEAVING. Position wanted by man 30 yrs. of age, American, married. Worked on men's wear, women's dress goods, ratines, automobile upholstery goods. Familiar with C&K and Draper automatic looms. Good references.
O. B. 1036, Textile World, Boston, Mass.

	1 inch	2 inches
1 time	$3.50	$7.00
2 times	7.00	13.20
3 times	10.50	19.20
4 times	13.20	24.80

TEXTILE CLEARING HOUSE

	3 inches	4 inches
1 time	$10.50	$13.20
2 times	19.20	24.80
3 times	27.90	36.00
4 times	36.00	48.00

FOR SALE

AN UNIQUE MILL PROPOSITION

The "New Pocasset" Mills in Fall River

About a year ago the Pocasset Mills in Fall River, comprising five separate mills with a total of 123,000 spindles and 2800 looms, decided to carry out a plan, which, with one successful exception, is different from anything that has been done hitherto in re-organization and re-arrangement of New England cotton manufacturing plants.

They employed competent engineering and manufacturing talent to make a careful survey of the property with the view of selecting and choosing from the entire equipment, **a unit of 43,000 spindles of first class modern machinery well balanced in every respect.** This machinery has been installed and laid out to conform to up-to-date practice in what was formerly the No. 5 Mill. Only the best machinery in the former plants has been selected. The balance has been sold or scrapped.

This 43,000 spindle mill is not a miscellaneous assortment of old machinery, but a carefully laid out and well balanced modern mill. Most of the preparatory, carding and spinning is H & B American Machine Co. There are 610 Model E Draper looms ranging from 36" to 48" wide and 177 plain looms.

There is a good power plant consisting of a modern boiler equipped to burn either oil or coal, and engine house; an adequate machine shop and cotton store house. There is also auxiliary water power.

The mill is five stories high, of granite construction with flat roof—tar and gravel. It is well lighted and supplied with complete sprinkler system and humidifiers.

The property is offered for sale **as a whole at a remarkably low price** and can be operated to advantage in Fall River. The plant will **not** be broken up to be sold in separate machinery units.

For further details of equipment and other information address

POCASSET MFG. CO., Fall River, Mass.

(There are 72 H & B cards in one of the other mills which must be sold in two weeks, as building is coming down. In first class condition; 10 to 15 years old. Recently re-clothed. No reasonable offer refused.)

TEXTILE MILLS

Our Department of Mill Properties acts as agent for the purchase and sale of complete textile plants in any part of the country, and for vacant plants suitable for textile mill purposes.

To those who contemplate the purchase of textile mill units this Department can give a very complete survey of available properties.

Mill owners who would be willing to entertain offers for their property can negotiate through us with the absolute assurance that no confidence will be violated. We are thoroughly accustomed to handling the largest as well as the smallest of mill transactions in a strictly private and confidential way.

Address all such communications to

BRAGDON, LORD & NAGLE CO.

Dept. of Mill Properties

334 Fourth Ave. New York

Mills Wanted, For Sale or Lease

Manufacturing Opportunity

FOR SALE

Complete plant for manufacturing ladies' rayon garments from yarn. 36 Tompkins fine gauge tables, winders, sewing machines, dyeing plant, also buildings, $80,000.

COTTON MACHINERY

3—Kitson 45" single beater breaker pickers with feeders, $350 each.
5—Kitson 45" intermediate pickers, $200 each.
5—Kitson 45" pickers with Kirschner carding beaters, $200 each.
1—Hopedale wet or dry twister; 128 spindles, 3½" gauge, 2½" ring, 8" spindle, band driven, $200.
1—Foster Model 12 cone winder, 100 spindles, $200.
2—Saco-Pettee fine roving frames, 7 x 3½, 160 spindles each, $300 each.
16 heads Saco-Pettee railway drawing; 12" coilers, act. $50 each.

W. HERBERT PERRY,
2-4 Market St., Amsterdam, N. Y.

FOR SALE

An established, modern Knitting Mill located in the heart of the Knit Goods business in New York State. Product of mill is held in high regard by the trade. Fine equipment. Splendid location. Large plot of land. Superior shipping facilities. New York Central R. R., Barge Canal, West Shore R. R. Low rate electric power, low taxes and cheap water rates. We invite inspection.

Address Adv. 78, Textile World,
334 Fourth Ave., New York.

FOR SALE

THROWING PLANT, producing 1200 to 1500 lbs. of Crepe weekly.
Modern Machinery—Running Full.
Excellent Labor conditions.
Small Pennsylvania town.
Address Adv. 94, Textile World,
334 Fourth Ave., New York.

Position Wanted

Position Wanted

WANTED

Mill hosiery line for men and women for retailers and jobbers in Illinois, Iowa or Indiana. Illinois preferred. No advance expense required. References furnished. Address,

M. WAGNER, 121 7th Ave., Peoria, Ill.

EXECUTIVE

Age 33, married, possessing initiative and ability, competent to assume and execute responsibilities, without supervision, 14 years experience in executive and official capacity; desires managerial position with progressive concern.

Address Adv. 75, Textile World,
334 Fourth Avee., New York

MILL SUPERINTENDENT

With thirty years experience on all grades of men and ladies knitted and nainsook underwear. Also understands the manufacture of yarns on cotton and woolen systems. Fifty years of age, married and will go South if necessary. Can furnish first class references.

Address Adv. 73, Textile World,
334 Fourth Ave., New York

POSITION WANTED

Overseer of weaving or second-hand on cotton and rayon on Draper, Hopedale & C. & K. looms. Twenty years experience. American.

Address Adv. 87, Textile World,
334 Fourth Ave., New York.

HOSIERY DYER

Thoroughly experienced on dyeing and bleaching of all grades of hosiery, desires position.

Address Adv. 90, Textile World,
334 Fourth Ave., New York.

MECHANICAL ENGINEER—Experienced in Textile Plant layout and maintenance pertaining to process operation of combined Steam, Electrical, and Mechanical Equipment, desires responsible job with a growing concern in Philadelphia, Pa., or vicinity. 10 years' experience, technical education, 30 years old, married, employed with a large old established company.

Address Adv. 86, Textile World,
334 Fourth Ave., New York

Chemist — Assistant Dyer

Recent textile school graduate, 23, experienced in weighting and dyeing silk piece goods, desires place in laboratory or works.

Address Adv. 95, Textile World,
334 Fourth Ave., New York.

SALESMAN

18 years' actual selling experience of worsted, silk, and rayon yarn, to both knitting and weaving trades, desires first-class connection. Has well established trade.

Address Adv. 100, Textile World,
828 Drexel Bldg., Phila., Pa.

TODAY

—A good time to make a list of the machines and equipment in your plant that are not in use, or those odd lots of yarns or supplies that you have no further use for.

Send the list to the Clearing House Department of Textile World. A small advertisement at a low cost will help you secure buyers. The rates are printed at the head of every Clearing House page.

TEXTILE WORLD
334 Fourth Ave., New York

Maintenance of Our National Industrial Progress Depends upon Pure-Science Research

Development of Industrial Investigation Has Far Exceeded That of Fundamental Effort

An Interview with

Hon. Herbert Hoover

The Secretary of Commerce

SECRETARY HOOVER was approached by a representative of TEXTILE WORLD for his views on the relation of scientific research to practical industry. He stated:

"As a nation we are spending, through our industries and our various Government agencies, at least $200,000,000 a year in applied or industrial research. More than 30,000 men are engaged in this work.

"There is available for the support of pure science research less than $10,000,000 a year. Not more than 4,000 men are devoting their efforts in this direction and most of these are dividing their time between research and teaching.

"The discrepancy between these two facts becomes apparent when it is realized that pure science is the basis of applied science. The former supplies raw material for the latter in two directions; it furnishes both thought and men. Industrial research is merely the application of the results of the search for new fundamental laws and substances. Furthermore our industrial laboratories draw their personnel very largely from the universities and other centers of pure science effort.

"I would not desire to see the slightest curtailment in the development of our national applied research. Nor have I any fear that such curtailment will take place. On the contrary, each month is witnessing the expenditure of more money and the enlisting of the services of more men in this direction—to the tangible benefit of our industries and our individuals.

"In the field of pure science, however, there is no such certain growth. There is instead a very real and pressing danger of retrogression—of a decrease in the already meagre amount of money and number of men engaged therein.

"This danger arises principally from two sources. In the first place the tremendous additional pressure placed upon our colleges and universities during recent years in the form of a sharp increase in the number of students to be taught, and the greater cost which university administration shares with all other lines of endeavor, have reduced to a marked extent the amount of time which faculty members can devote to pure science researches. This is particularly alarming because we still must look to the universities for the bulk of the additions to our scientific knowledge.

"The other outstanding cause of depletion in the ranks of scientific investigators has been the drawing of such men into the field of industrial research. It is to the universities and the Government departments principally that industries have gone in their search for men to conduct their applied research. Such enlistment of men is entirely natural and not subject to criticism. The complaint rests solely in our failure as a nation to enable the institutions where these scientists work to offer them sufficient support. The man of pure science, as a type, is not actually in the market. His labors have no price; they are merely the inevitable expression of his avocation. Nevertheless he must live—and must be free from financial worry if he is to devote his best efforts to scientific study. Tales of the effectiveness of life in a garret and of subsistence on bread and water, so far as scientists are concerned, are myths. No one knows how much more these great men of the past might have accomplished if they could have rid themselves of the fear of starvation.

"It is our problem as individuals and as a nation to insure expansion of development in the field of pure science if we wish to insure the maintenance of our national progress.

"It is from this standpoint that, as Secretary of Commerce, I have been primarily concerned with the awakening of general interest in fundamental scientific endeavor. Aside from its humanitarian aspects, pure science has a dollars-and-cents appeal to every industrialist and every business man.

"The textile manufacturer is interested rightly in every development, either chemical or mechanical, which increases the efficiency of his plant, decreases his cost of production and eliminates waste. Such developments contribute to the sum total of our national wealth and to the prosperity of every individual employed within the industry—and to every individual whose livelihood depends—even though partly and indirectly—upon the progress of that industry.

"Similarly, the textile manufacturer is—or should be—at least equally interested in every addition to fundamental knowledge of the fibers and materials which he uses.

"Furthermore he is—or should be—concerned with every development in the field of pure science, whether or not it appears at the time to have no, or at the best a remote, bearing on the technique of his own processes. This is true for two reasons: In the first place, the ramifications of every scientific discovery are so complicated that no one can tell what effect it will have in time upon any one industry. The discovery of the scientific fundamentals which led to the gas engine and the radio in both cases increased the demand for textiles. In the second place, any accomplishment which contributes to the progress of an industry or industries outside the realm of textile manufacture necessarily raises the level of our national well being and increases the demand for textile products. This statement is made here in connection with the textile industry but it applies conversely to any other industry.

"It is probable that the older industries, of which textiles is a typical example, have a particular need for the development of scientific truths. They not only have a lack of fundamental knowledge but have an abundance of error, resulting from the traditional assumption of premises whose soundness has never been established.

"This statement applies to both the technique and the economics of such industries. Recognition of the latter phase by textile manufacturers has been reflected in the recent formation of The Cotton-Textile Institute for the primary purpose of investigating the economic premises upon which textile production and distribution have been based—and of substituting fact for empiricism.

"Similarly they must—and undoubt-

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A Recent Informal Pose of Secretary Hoover Caught at the Army-Navy Game Last Fall

edly will—come to a recognition of the need for coordinated investigation of the premises on which their technique is based. They are today the beneficiaries of the results of scientific discoveries made many decades ago. The remarkable progress in dyeing alone dates back to Perkins' discovery of the colors in coal tar dye products and beyond that to the scientific establishment of the molecular theory of the structure of carbon compounds. The development in rayon manufacture during the last eight years, affecting as it has all branches of the textile industry, would not have been possible without the efforts of Chardonnet and without the painstaking study of cellulose chemistry which antedated him.

"These are two examples out of many but they are sufficient to show that the position of beneficiary of past scientific development carries with it an obligation. In dyeing for instance, leading dye chemists have admitted frankly that progress in this field is restricted by our lack of knowledge as to how or why a dye attaches itself to a fiber, and lack of definite information regarding the co-relation of color and chemical composition. In rayon, great as the development has been, its maximum possibilities can never be realized until our knowledge of cellulose chemistry is broadened.

"We have in the past looked to Europe for much of our fundamental scientific knowledge and have applied it here more effectively than has any other nation. Today we cannot depend upon this source—even though our national pride did not rebel against such dependence. The aftermath of the war has carried with it greater danger to the development of pure science effort in the countries of Europe than it has here. The threat of almost certain starvation has diverted European scientists from their chosen lines of endeavor.

"Consequently, the burden placed upon us today is greater than ever before. This burden rests more heavily upon the men connected with our industries than upon any other one class. The task of the industrial technician is of the missionary type. While proceeding with the application of existing scientific knowledge to his own field, he must keep ever before him the importance of fundamental study. At the same time he must see to it that those in financial control of his company share this appreciation. The task of the industrial executive is to lend all possible aid to fundamental research movements started within his own industry and to the development of pure science effort in the country at large.

"What is needed most is a different mental attitude toward pure science. To most of us, the great discoveries of the past are impersonal, intangible events which have no bearing upon our own lives and problems. We do not realize that American industry, as we know it today, has been built upon this foundation. We must come to regard pure science effort as an absolute necessity if the American standard of living is to withstand the strain of further growth in population. When we as a nation achieve this attitude of mind, we shall find that there is no investment of our thought and money which will bear greater returns than that entrusted to the field of pure science."

THERE is today within the ranks of textile manufacturers a greater appreciation of the importance of fundamental investigation, both technical and economic, than has ever existed in the history of the industry.

Despite this advance, however, there is still a great majority which, while endorsing and promoting industrial research, has not come to a recognition of the significance of fundamental research.

It is with this thought in mind that the editors of TEXTILE WORLD have asked Secretary Hoover for the accompanying message. Probably no man in the country is better equipped to speak on this subject than is Mr. Hoover. By training an engineer, he has the engineer's appreciation of the application of scientific knowledge. His notable accomplishments in relief work during the war strengthened his grasp of this subject. As Secretary of Commerce for the last seven years, during which time he has raised the effectiveness of that department to a level undreamed of before, he has had an unusual opportunity to study the effect of scientific discovery upon business progress.

National recognition of Mr. Hoover's knowledge of this relationship was given him when he was made Chairman of a special Board of Trustees appointed two years ago by the National Academy of Sciences to collect and administer a fund for the support of research in pure science. He has given unsparingly of his time to the promotion of this effort, solely out of his belief that in this direction lies assured maintenance of our national prosperity.

This Much Has Been Done

A Message from the Editors of TEXTILE WORLD

FOR many years the editors of TEXTILE WORLD have been preaching to textile manufacturers on these two texts:

(1) Cooperative effort on the part of the industry.
(2) Mental flexibility on the part of individuals.

This year it is their pleasant task to review actual accomplishments in these two directions.

* * *

Within the last two years, the following movements have been organized:

(1) Formation of The Cotton-Textile Institute.
(2) Incorporation of the Wool Institute.
(3) Development of the educational campaign of the Rayon Institute.
(4) Organization of the Carpet Manufacturers of America.
(5) Formation of the Mercerizers' Association of America.
(6) Establishment of The Arkwrights, Inc.

* * *

Out of these new movements and the extension of activities of existing organizations, have developed the following:

(1) Foundation work for accurate information regarding statistical position of individual divisions of the industry.
(2) A conscientious attempt to regulate production to demand on the basis of this knowledge.
(3) Appreciation and promotion of sound cost-finding methods.
(4) Research into possibilities of new outlets for, and extension of existing uses of, textile products.
(5) Formulation of Codes of Practice for the improvement of trade ethics.
(6) Increased interest in applied technical research.
(7) Standardization and simplification of products.

* * *

Textile manufacturers, individually, have evidenced a new spirit of mental flexibility in these directions:

(1) Adaptation of their products to meet the demands of consumers.
(2) A new attention to the efficient merchandising of their goods.
(3) Modernization of antiquated buildings and equipment.
(4) Development of increased output per operative, promising greater returns to both employes and management.
(5) An attempt to build up interest on the part of communities in their industries.
(6) Liquidation of uneconomic manufacturing units.

* * *

A start has been made. Textile manufacturers, as a class, are on the right road to sound prosperity.

But the way is a long one. Each of these lines of endeavor must be pushed to its conclusion. Particularly must:

(1) Organized research into the fundamentals of manufacturing technique be undertaken;
(2) Modern merchandising science be utilized.

* * *

Those who lag are doomed. Those who cooperate with others and who keep their own houses in order are assured of ultimate success.

Sound Cost Finding Methods Essential for Textile Mills, Says Walker D. Hines

Outlines Procedure Which Institute Will Follow In Developing Knowledge of Basic Principles

By Walker D. Hines
President of The Cotton-Textile Institute

I BELIEVE one of the most important opportunities before The Cotton-Textile Institute relates to encouraging the more general employment of sound cost finding methods in the various mills and a closer approximation to uniformity.

Of course many of the mills have cost accounting systems which are sound in principle and adequate in scope and method, but I believe it is also true that many mills still have an opportunity for marked improvement in this matter.

There is a very general conviction on the part of business men that an adequate and accurate cost system is an extremely valuable guide in merchandising as well as in attaining increased manufacturing efficiency. There is this difference in the extent of the disadvantage arising from any failure to avail of the very best cost accounting methods: In the matter of manufacturing efficiency, such a failure involves a loss only to the particular mill, but in the matter of merchandising such a failure is likely to lead to unremunerative prices not only for the particular mill but for other mills making a competitive product, even though the latter mills may have the very best cost finding system.

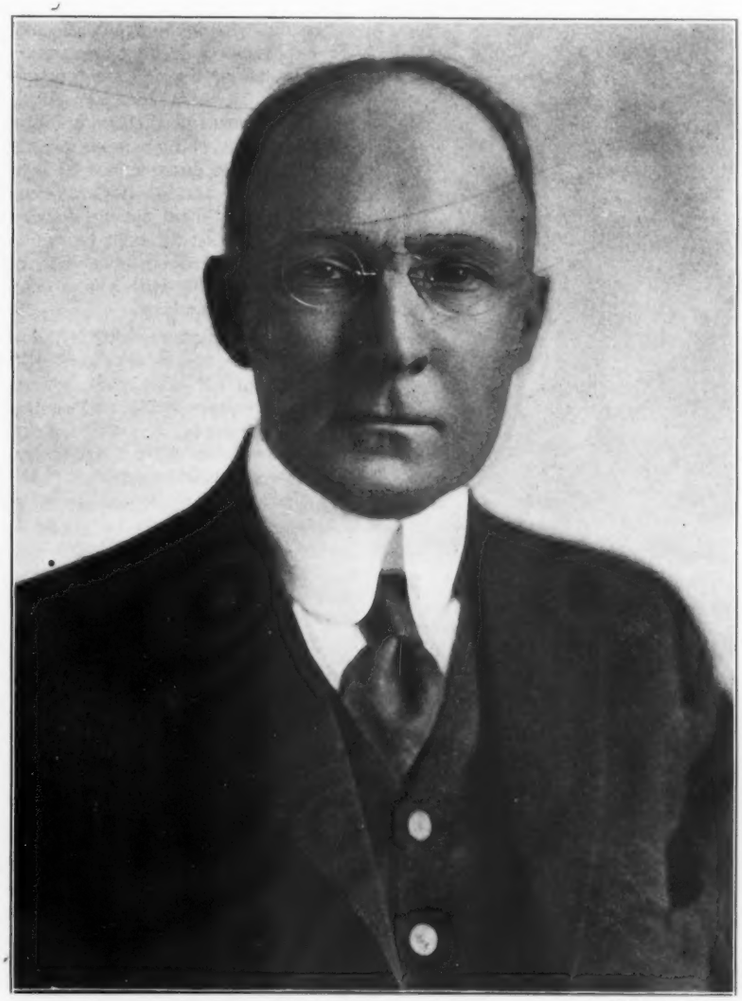
The question of cost accounting is one of the first steps with which the Institute began to deal after it was fully organized. A cost engineer, G. W. Duncan, was appointed last May. He has since devoted himself to a study of existing cost accounting methods in the cotton mills, has held repeated discussions with executives and cost accountants of different mills, and generally has been laying the foundation for a comprehensive treatment of the subject.

Meetings with Mill Groups

One of the most important branches of his work has been the holding of a series of meetings with the cost accounting experts of the mills included in the Groups which have been organized by the Institute. These meetings have been held with a view to evoking the ideas of those cost accountants as to the most approved basic principles, and also with a view to stimulating interest in the subject upon the part of the mill cost accountants generally. Meetings of this character have been held in the Wide Sheetings Group, the Narrow Sheetings Group, and the northern and southern branches of the Print Cloth Group, and conferences on the matter have taken place also with the Cost Accounting Captains in the Carded Yarn Group, the Osnaburg Group and the Chambray Group. These meetings and conferences have been of a distinctly educational character.

Procedure to be Followed

The most gratifying aspect of the investigations and discussions which have so far taken place is that there has developed a marked degree of unanimity among the cost accounting experts in the industry as to what are the sound principles which call for application. The next step which the Institute will take will be the formulation by the cost engineer, in conjunction with the president, of a tentative outline expressing the principles which have been so generally endorsed by the cost accounting experts and which we regard as sound. This outline will then be submitted for the advice of an outside public accountant in general and very varied practice, and also to outside public accountants specializing largely on cost accounting in textile mills. In the light of their advice, the outline will be completed and will be submitted to the mills for their consideration.



Walker D. Hines ©Harris & Ewing

Each mill will make its own decision as to the extent to which the principles of this outline will be put into practice, but it is believed that the principles will be so sound and well authenticated, and in fact so generally acknowledged as correct by the cost accountants in the industry, that the outline will have a favorable reception on the part of many of those mills not already applying in the most complete manner the principles calculated to develop accurate and reliable information.

Will Not Install Systems

It will not be the purpose of the Institute to undertake the installation of a cost accounting system in any of the mills. That work will be done, so far as the respective mills wish to have it done, by the mill staffs or through the advice of cost accounting firms. The Institute's function will be to encourage the disposition on the part of the mills, through agencies of their own selection, to improve those cost accounting systems which may fall short of exemplifying the best principles.

I hope that this work will not only result in a much more general use of sound cost principles, but that it will also prepare the way for the obtaining and furnishing of information as to average costs in different groups of mills, which information ought to have a useful and stimulating effect in the direction of improved efficiency. This development of average costs, however, will be an entirely distinct matter from each mill obtaining for itself the best information as to its own costs. If mills possessing such information as to their respective costs wish to take the further step of cooperating to obtain information as to the average costs for the group, the Institute will be prepared to supply the machinery for this purpose, receiving from each mill, in strict confidence, its own costs, and then deriving therefrom an average figure, or possibly also minimum and maximum figures, and sending the same to the mills generally in that group. The figures thus distributed would, of course, not disclose any facts as to the position of any particular mill.

Mills Must Know Their Costs

But whether or not mills wish to initiate such a dissemination of information, it is still true that it is of vital importance for each mill to know its own costs accurately and on a thoroughly sound basis.

Knowing that TEXTILE WORLD attaches great importance to continued improvement of sound cost accounting methods, as well as to giving greater attention to costs when properly ascertained, I look forward to having its strong support for the efforts of the Institute in these directions.

"Don't Blame the Industry" Is a Banker's Advice To Textile Manufacturers

Fault Rests with Individual Members Who Have Not Adjusted Enterprises to Economic Changes

By F. W. Shibley
Vice President, Bankers Trust Co., New York

A POINT of view sometimes determines policies. It is very important, therefore, that the observer of conditions in an industry get himself properly oriented or the picture representing what is happening will be distorted.

Apparently forces, adverse to profits, have been operating aggressively in the textile industry during the last five years. In such a situation constructive criticism can only be helpful if it is based on a correct premise.

In my opinion it is not the textile industry which has been at fault, but the individual members of it who have not adjusted their enterprises to economic changes taking place within the industry.

The textile industry as represented by the manufacture, merchandising, marketing and distribution of the products of cotton, wool and silk has been passing through an economic readjustment of a very interesting character during the post-war period. It has been adapting itself to new world conditions in a healthy and normal way.

The prices of cotton, wool and silk are fixed in the markets of the world on the basis of supply and demand and in recent years have moved freely and naturally. No abnormal conditions have existed in raw material supply.

Throughout this period there has been a persistent broad demand for the products fabricated from these fibers. When the demand for certain materials in a particular market has declined the slack has been taken up through the increased requirement from another market as, for example, when the use of cotton for clothing decreased materially balance was maintained by an increased demand for industrial purposes. When woolen goods slumped in America, the shrinkage was absorbed in other countries throughout the world. Whatever happened, raw materials were consumed in a normal way. Such inter-industrial changes in consumer requirements take place in practically all industries. Economic conditions are constantly in a state of flux and human beings are required to foresee, if possible, these changes and by anticipation minimize any ill effects from them.

If an unbalanced and confused condition exists in the textile industry at the present time it is because manufacturers and the distributors of their products have not accommodated themselves to the economic conditions governing their industry and if they are to get their enterprises into a condition of profitable operation they must adapt their operations to the requirements of the times.

Relate Production to Sales

This demands first of all that production shall be related to sales and furthermore that this relation shall be highly flexible. It does not matter how great the over-productive capacity may be in any line; consumer requirement

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is the governing factor and must be followed. Distressed merchandise is the unfortunate off-spring of overproduction. Sales prices fade away when brought into contact with it.

The outstanding problem in the textile industry is how to prevent overproduction. The national associations of manufacturers of cotton, wool and silk products are gathering facts and broadcasting information so that manufacturers may inform themselves, but in the final analysis each manufacturer must solve this problem himself.

He should recognize that current business is highly competitive, that prices for textile products manifest a declining rather than a rising tendency, and in consequence the spread between costs of production and income from sales is narrowing steadily. Palpably he must decrease production and distribution costs. To accomplish this he must resort to analysis for the simple reason that he must obtain an intimate knowledge of the atomic details of his business before he can hope to be intelligently constructive.

Importance of Analysis

The value of analysis is not properly appreciated because it is not adequately understood.

Analysis resembles the procedure of a watchmaker to whom is given a watch for repair. Such a skilled workman first examines the mechanism of the watch, carefully seeking to ascertain where the trouble centers. If he discovers it he can correct it without taking the delicate time-piece apart, but if he satisfies himself that the entire works need cleaning and readjustment in addition to certain definite repairs, he disassembles the watch placing each item of its mechanism, wheel, pinion, main spring, jewel or gear carefully on the table before him and then proceeds to examine each such part critically with a microscope. This is simple analysis.

If the manufacturer shall set down every item of cost as a percentage of the dollar of net sales year after year over a five-year period and compare these percentages, he will see intimately how costs have been tending. This is comparative analysis.

Analysis should be made also of the products manufactured by kinds and styles so as to determine which products possess possibilities of profits and which should be deleted from the line.

He should analyze moreover his methods of distribution. The old stream of distribution has developed several new channels in recent years and the manufacturer must ascertain if his products are flowing freely and in the most economical way to their natural markets.

Must Know Markets

The next thing for him to do is to know his markets and to gain a comprehensive knowledge of them he must study them and come to an intelligent comprehension of their possibilities for his particular products. He must know what his various consumer outlets demand in the way of quality, design, style and preparation. He must obtain accurate information as to what is the best way to distribute his merchandise and especially as to how best to obtain the interest of consumers. He must continue to study his markets until he can translate consumer demand in terms of quality, design, style and preparation to his producing organization. That is the aim of market study, the bringing of consumer and producer into the harmonious relationship of mutual understanding.

He must then plan his production so that it shall adapt itself in a flexible way to sales requirements and he must learn to turn his active inventory at least three times as fast as it is now revolving. Modern competitive conditions demand this if profits are to result.

Control of Operations

Then he must control his operations as planned. In order to do this he must acquire an intimate knowledge of the budget and its analytical satellite the sales dollar. These two will prove to be just as true friends to him as is the compass to the navigator. They will show him how to arrive at true costs for his products and they will point the way for him to reduce costs. They will tell him whether he is efficient or inefficient and they will develop the efficiency or inefficiency of his entire organization. The budget and the sales dollar set standards for accomplishment and the attainment of standards is the test of management.

Manufacturers and merchants who have adopted the principles of scientific management and followed them faithfully during this period of readjustment which has been referred to, have been successful and their success has been exhibited in their annual statements of operations and in their balance sheets. This fact cannot be disputed. The notable examples exist where foresight and efficiency in management have proven themselves superior to all unfavorable conditions in trade.

Competition Will Intensify

It seems evident that the textile industry is entering upon a period of even more intense competition than has been experienced in the past. While the prices of its raw materials are fixed in the markets of the world, prices of manufactured textile fabrics are controlled more or less by local conditions and I am inclined to believe that prices for these fabrics generally will show a declining tendency over the next few years. The textile manufacturer, therefore, will find himself between the devil and the deep sea unless he vigorously adapts himself to these conditions and to do this he must have the last word in modern machinery and must design, style and prepare his products to meet the requirements of a constantly changing consumer demand, all of which is no easy task but can be accomplished if gone about in the right way.

Attitude and Responsibility of Banking Fraternity Toward the Textile Industry

An Analysis of the Aid to Be Expected from Banks and the Reciprocal Cooperation Necessary

By Walter S. Bucklin

President, The National Shawmut Bank of Boston

WHEN an article on banking attitude toward the textile industry was suggested, the old saying came into my mind—"The Lord helps those who help themselves." This saying, paraphrased to meet the textile problem of today and with no thought of being sacrilegious, seems to me to be "The bank helps those who help themselves." This applies to the textile industry with particular force at this time.

This question of banking attitude toward the textile industry is truly a grave one, and is perhaps not thoroughly understood by some of those connected with the business. The purpose of this article is to set forth frankly certain phases of the problem from the banking viewpoint. It is hardly necessary to explain to readers of such a publication as TEXTILE WORLD the condition in which the industry finds itself to-day—a condition brought about or influenced by changing styles and ways of living, by labor and taxation burdens, by over-production in certain lines and by inefficient methods here and there.

These problems are having the attention of leaders in the industry. Such developments as The Cotton-Textile Institute are most encouraging and show that the industry is not lacking in men of resource and vision.

Textile Mills Classified

In so far as banking contact and support are concerned, it seems to me that textile mills can be roughly grouped into three classes. First come those unusually successful concerns which have been able to make money even during the depression of the last few years due to ability of the management. This relatively small group may be eliminated from this discussion for the reason that such mills present no problems to the banks, nor need in most cases to come to the banker for council or aid.

The second group is made up of companies whose number and size are still large in spite of the drastic elimination that has already taken place—companies which present border line cases, which are not now successful but give promise of profitable operation provided certain changes are made.

The third and last group consists of those units which for one reason or another are no longer economically justified. They have little or no hope of making money. Their product is not generally needed by consumers and they flood the market with goods produced at a loss and sold at cut prices merely to keep the machinery in operation from one month to another. It seems to me that banks have no right to assist in prolonging the life of such concerns once it has been conclusively proved that they cannot be successfully operated over a long period and without artificial support.

Bank Serves Many Interests

Now you may be wondering just how the banks play a part in such matters. A bank has many interests to serve, several groups to whom an account must be rendered. Admittedly one of the most important of these groups is industry and commerce in general. A second group consists of a bank's own customers no matter what their line of business may be. One of the primary functions of banks is to place loans and services at the disposal of its customers as long as there is reason to believe that these are fully warranted, but a bank must never forget that its customers not only borrow but also leave money on deposit. Such money must be safeguarded, protected, carefully put to work, but always be available for withdrawal at a moment's notice. Consequently no bank has the right to adopt a loaning policy which will tie up its resources in frozen credits and so render itself non-liquid and unable to meet the reasonable demands of its customers. There is still another group to which the management of a bank is responsible—I refer to its stockholders. A stockholder in a bank, as in an industrial company, has the right to expect that directors and officers will conduct its business carefully, will take proper care in investing its funds to the end—from the stockholder's viewpoint—of increasing the bank's resources, its profits and its dividends.

Responsibility Toward Industry

Now from this brief survey of the main groups to which a bank is responsible, can be more readily understood the various questions which the subject of this article has raised in my mind. Surely everyone will agree to the generalization that banks—and by this is meant of course commercial banks—have a definite responsibility toward industry, and in this particular case toward the great basic textile industry which produces one of the fundamental needs of mankind.

Civilized people will presumably always need clothing and the various kinds of goods used in many products. Consequently the textile industry will always be with us. Its products are not merely passing fads or novelties of the moment; they are in the main necessities of life. Because of the range of the textile industry the prosperity of many other lines of business is interwoven with that of the mills. So, too, is the prosperity and well-being of several million American citizens. When many parts of such a vital industry need rehabilitation and help, banks should be ready and willing to assist in every way consistent with good business.

Walter S. Bucklin

Banks can frequently render definite assistance and are doing so each day, not only by extension of loans so that a company temporarily embarrassed may have time to get on its feet—but also by cooperating in reorganizations. Banks also assist by placing at the disposal of customers, technical reports and advice from experts, who may be a part of the bank's own staff as is the case with some of the country's larger institutions, or may be outside specialists whose services and past experience may be better known to the banks than to some of the mill men.

Reciprocal Cooperation

So much for the general principle that banks should assist and are assisting their textile customers—but we must not stop with a sweeping and somewhat superficial statement. Banks have the right to count on cooperation—and intelligent cooperation—from the industry. They should not be expected to carry the whole load, to go beyond their purely banking functions into taking an interest in management and even operation of mills unless the companies themselves show every disposition to do their part. To be specific and to make my point clear by concrete examples, let me lay before you the cases of two mills. Each has a different problem, each is typical of a great number which come to my attention from time to time. It seems hardly necessary to add that no specific companies are described in the following paragraphs.

The First Example

The first concern has had a long and for the most part prosperous life, until recently. Its reputation was made years ago in a certain type of cotton cloth, and although the mill's output is relatively small its product has had few equals. The management is still in the hands of older men who feel sure that the public taste must turn again, resulting in a substantial increase in their orders. In the meantime they see no reason for changing the policies which have led to success in the past. Their plant, although old, is strategically located in a community where labor is abundant and trained; its equipment is in excellent condition. Except for one thing, the company's future would be bright—but the fickle public no longer wants this particular product. Instead they want anything but what was so popular in years gone by. But the management, refusing to look facts in the face, insists on turning out the goods on which its old fair name was made.

In the meantime the four banks from whom the company has been borrowing steadily for several years, become somewhat anxious. Quarter by quarter they see losses piling up, equity gradually depleted. They wonder how much longer these losses can continue without jeopardizing their loans, without a loss to themselves. So they ask the management what its plans are, and also obtain impartial surveys from mill experts who conclude that the company's only salvation is a different product. Installation of the new equipment can readily be financed by the company which in spite of losses still has ample capital. So the banks feel forced to tell the company that their loans cannot be continued indefinitely in their opinion without loss—that they will, however, cooperate with the company if its energies are turned toward making goods which the 1928 public demands. This attitude on the part of the banks is in my mind a constructive one. They are willing to help as long as the company does its part. So the change takes place and if all goes well, red figures are turned into black and after

a period the company is able to treat its banks in the most desirable way by going out of debt to each one during the year.

But suppose that the management cannot see the hand-writing on the wall—rather that it adheres to its old business, refuses to change its product to meet changing styles, insists on trying to compete in 1928 with goods which were popular in 1910. Has the company any right to expect that the banks will continue when such continuation in their opinion will result in losses on bank loans? Has this company really not forced its banks to request payment of their loans, as a matter of protection to themselves and to the other groups in the community whose interests also have to be considered?

Another Case

Let us examine another situation, still having in mind the banks' responsibility in a textile problem. Let us take a mill whose product is eminently satisfactory and sells at good prices. The only trouble here is that its equipment is poorly balanced, is top heavy. Lack of one type of machine slows up production all along the line. As a result the company's output is much too small in proportion to its potentialities and to its overhead. On this account the company is rapidly losing money in spite of good product and excellent management. Its financial condition is weakened so that the necessary equipment cannot be paid for; yet textile experts declare that the mill should be most profitable if balanced production could be obtained.

Where is this new money to come from? The banks certainly are not justified in making any fresh loans in such a situation. Their present loans can be paid now through liquidation but they have no right to make any advances which could probably not be paid off for years. A bank's loans should be liquid, should in most cases be paid off in full once a year. Furthermore, what incentive do the banks have to risk new money? Interest at low rates is not particularly attractive surely, when the loan itself would not be good beyond question. And who gains if the new equipment produces the desired effect and the company is prosperous—who indeed but the owners of the business, the company's stockholders? The stockholders are then the logical group to step forward in such a situation and provide the new capital.

If such new funds are forthcoming and will be used for productive purposes, then the banks' duty is to extend bank loans, to be patient, to do their part in nursing the company back to health. The banks must take a broad view of the situation, must look beyond the immediate liquidity of their loans and be willing to do their part in saving a business enterprise. Such cooperation by banks and stockholders keeps an industry alive, adds to the community's wealth, produces merchandise which people need, gives employment to labor, and income to the municipality. But here again—if the stockholders, when the problem is explained to them, say "No, the company has been losing money lately and may continue to do so in spite of opinion to the contrary by our own Stockholders' Committee and by experts—we as stockholders have no faith in our company and so prefer to see it liquidated"—in such a case how can the banks continue indefinitely?

A Helpful Attitude

These two examples illustrate my point. Bankers should have and in my opinion do have in most cases a constructive, helpful attitude toward the textile industry. They should exercise patience, courage, discrimination in helping textile companies to work out their various problems. However, their obligation to the business community as a whole is such that they have no right to assist in keeping alive a particular company which gives no promise of success.

In order to be of practical assistance to textile organizations in carrying out the suggestions made in this article, some banks have already established industrial departments, through which the textile manufacturer can be supplied with competent advice regarding products, management or refinancing. With such institutions, textile organizations will find it most advantageous to ally themselves. Let me emphasize the belief that the business community itself should want the banks to give assistance only where it is for the best interests of all concerned. To every textile undertaking which approaches its problems in a broad, intelligent manner and shows a willingness to bear part of the burden in meeting the banks half-way, should be extended necessary banking support. Such support will continue to be given in the future, although the need for it will in all probability gradually decrease. The textile industry in 1928 should benefit by the generally favorable outlook for business as a whole.

Southern Bankers Have Particular Reasons for Interest in Textile Industry

Cotton and Its Manufacture a Primary Factor There—Responsibility a Broad One

By Robert Strickland, Jr.

Vice-President, The Fourth National Bank, Atlanta, Ga.

IN discussing the attitude and responsibility of the banking fraternity toward the textile industry, the writer naturally approaches the subject, as the editor no doubt expected of him, from the standpoint of the southern banker.

Certainly the tremendous scope and importance of the textile industry warrants the best thought and attention of bankers generally, and all of us, bankers and textile men, can surely find common ground in recognition of the friendly and legitimately sympathetic interest that the banking fraternity in the older financial centers of the country have always manifested toward this great industry. The attitude has been one of constructive, helpful cooperation.

In our own section, the textile industry is younger. Cotton manufacturing with us really had its beginning in the nineties, and in the decade starting in 1910 showed its most pronounced development, foreshadowing the growth that has continued uninterruptedly ever since.

Reasons for Particular Interest

There are two fundamental reasons why the favorable attitude of the banking fraternity in general toward the textile industry is, and by right ought to be, peculiarly marked on the part of the southern banker. The first is the South's necessary and natural interest in cotton itself. The section is primarily agricultural, and cotton its primary product; and an analysis of the loan portfolio of any representative southern bank will undoubtedly show that in no other direction will its commitments approximate those made in connection with cotton. We finance it from the first stages of production, through the hands of the cotton merchant and the warehouse to the mill, and then back in the form of finished goods to the retailer's shelf and to the consuming public. The textile industry is vital to us because of its connection with our chief crop.

Robert Strickland, Jr.

In the second place, textiles are exceptionally important to us because they constitute by far the greatest proportion of all our industrial activity; and in fostering and encouraging the industrial development of our section, to bring about the economically desirable balance between agricultural and industrial activity, we necessarily give largest attention to the cotton mill. In short, the textile mill is of greater relative importance in the South than anywhere else.

The development of the industry in the Southeast in recent years has been amazing. But the growth in banking resources has been equally amazing, the progress of the one facilitating that of the other.

Responsibility of Bankers

So much for the attitude of the banking fraternity. The editor added the word responsibility—a very gratifying fact, since it affords opportunity to say that the same causes which affect the attitude of the southern banker toward the industry also emphasize his responsibility to it. The very importance of cotton in all its phases, and of the development of our industry on broad lines lays upon the southern banker a very great responsibility toward the textile industry.

This responsibility goes further than the mere extension of current financial accommodations. It includes counsel as well as cooperation, not only in everyday banking contacts, but in all the broader phases of the formulation and adoption of sound financial policies, affecting the permanent as well as the current financial problems of the mills.

It is the writer's conviction that the opportunity of cooperation with the textile industry, supplementing so remarkably the natural interest of the South in the growth of cotton itself, is one that southern bankers are coming more and more to appreciate.

WITH THE EDITORS

Editors: Charles H. Clark, Vernon E. Carroll, Clarence Hutton, Douglas G. Woolf — *We Believe in the Conservation and Protection of Domestic Industries*

More Than "Moderately Favorable" Outlook

"THE general outlook for the textile industry as a whole appears to be moderately favorable," writes Dr. Haney in the "TEXTILE WORLD Analyst." It is evident from the last paragraph of his forecast that he would regard the outlook as more favorable if he were certain of how quickly effective would be the present efforts of various branches of the industry to readjust supply to demand.

"Other great industries," says Dr. Haney, "recognize that a balance between their production and sales departments is one of the vital essentials. They recognize that competition must be reasonable and that production must be adjusted to consumption. They have learned how to operate accordingly. If the leaders in the textile industry will adopt the same methods insofar as is possible, and will cut their cloth to the coat, as it were, there is no reason why the industry should not be placed in the strongest position this year that it has occupied in its history."

It is largely because the editors are confident that real progress is being made in cooperative effort of this kind, and that it will prove more resultful this year than is generally anticipated, that they have the courage to regard the textile outlook as something more than "moderately favorable." However, they admit that they are temperamentally optimistic, and that it may require a longer apprentice period to place cooperative effort upon a permanently effective basis.

* * *

Merchandising is Both Buying and Selling

ONE of the greatest needs of all branches of the textile industry is expressed succinctly in the following admonition of the head of a large mill organization to his sales staff: "Get more orders and I will get more mills!"

It is merely another way of stating that potential productive capacity exceeds normal demand for most classes of goods, and that the greatest opportunity for individual mill organizations to improve their status is to increase their sales.

Probably more thought and energy are being devoted at present by manufacturers and selling agents to merchandising than to any other industrial function, and also to cooperative methods by which a closer balance between supply and demand may be maintained. But manufacturers should be careful that too great concentration upon this problem does not result in dangerously lessened attention to and efficiency of other functions.

It is quite true that the difference in average manufacturing efficiency of our mills is so small, as measured by cost differences, as to make it impossible for them to absorb in this department the losses of poor buying and poor selling, but it is only by efficiency in all departments that any mill can lift itself much above the average line of competition. And with few rare exceptions it is only large mills or group organizations that can command and pay for the highest type of skilled management for each department.

Successful merchandising not only requires efficient selling ability, but also a mill organization that is capable of producing the desired goods promptly and at competitive prices, and a buying organization that is skilled in purchasing the right raw materials and supplies advantageously. The latter is responsible for more than half of the cost of the finished goods, and many a mill organization will find therein a mine of possible economies well worth careful prospecting. Goods that are well bought and manufactured are half sold.

* * *

Attitude Toward Pure Science

"WHAT is needed most is a different mental attitude toward pure science." In these few words, Secretary Hoover, in an interview published elsewhere in this issue, offers the real solution to the problem of industrial complexity. Fundamental scientific development must be recognized as an integral part of our national life rather than as an intangible and detached field.

The leaders of certain industries have achieved this attitude. Textile manufacturers, as a class, have not. Eventually they will. In fact, they must.

Technical research, supplementing the economic research now under way, is bound to come. Each year of postponement represents the loss of valuable time.

* * *

The Cotton-Textile Institute's Future

ALTHOUGH little more than the development of a well-rounded organization was expected from The Cotton-Textile Institute during its first year of existence, far more was accomplished. Its activities, as summarized elsewhere in this issue, have had a direct and salutary influence upon the progress of the cotton manufacturing industry.

Past performance, however, is dwarfed by comparison with future promise. The industry is now more firmly convinced than ever that the motive which led to the formation of the Institute was a sound one—and, in fact, that this type of cooperative effort is an absolute necessity.

Through the instrumentality of The Cotton-Textile Institute, this division of the industry will be placed upon a sound economic footing, with production adjusted to type and volume of consumer demand. That one accomplishment will more than justify the existence of the organization.

The verb "will" in the above sentence must of course carry the qualifying phrase: "*if* the industry continues to supply its financial and moral support." However that is to be taken almost for granted, because any intelligent manufacturer must recognize the increased responsibility which the future broadening of the Institute's work will place upon him and his contemporaries.

* * *

Wool Institute Possibilities

ANNOUNCEMENT of the incorporation of the Wool Institute which has just been made marks the culmination of an effort at coordination in the woolen and worsted field. Although it has long been recognized that united action should be taken to improve conditions in this division of the industry, it has been only during the last two years that anything approaching industry-wide attention has been paid to the problems confronting manufacturers and selling agents. Not until 1927 did it seem possible to secure united action of a forward-looking character.

We congratulate those who have had an important part in the preliminary stages of the new organization that they have patterned its frame work upon the structure of The Cotton-Textile Institute. The evident benefit of the latter to the division which it serves is in itself sufficient warrant for attempting similar developments in a related section of the industry.

With division into groups, and all members of each group talking the same language, the individualistic feature should become less and less of a bete noire. The wool manufacturing industry has suffered in the past as an entity from lack of knowledge of their competitor's viewpoint. In spite of the associations comprehending in their membership leaders of the craft, as well as a very fair proportion of the rank and file, there is a notable aloofness, leading to individual action inspired by a wide divergence of opinion on vital issues. If the Wool Institute accomplishes nothing more than engendering a spirit of good will based upon a united stand against the evils which have crept into the business and a concerted effort to foster the agreed-upon ethics of the industry, it will have accomplished noteworthy results for all concerned.

Successful development of this trade organization will depend first and foremost upon enthusiastic participation in its activities. It is a trite saying that individual members of an association get out of it only as much as they put into it. Never did this declaration have more complete application than in the present instance. If manufacturers or selling agents base their connection with the Institute upon the acknowledged necessity of doing something merely for the sake of avoiding criticism and if their acceptance of responsibilities is merely a gesture the Institute is doomed to failure.

If, however, a sufficient number of leaders will catch a vision of the future, not only from an individual viewpoint, but more particularly from an industry viewpoint and will enter wholeheartedly and unselfishly into cooperative

effort under the aegis of this new organization, untold benefits are bound to result for the good not only of wool manufacturing and distribution as an economic entity but also to each individual connected therewith.

The year 1928 should make important history for this division of the textile industry.

* * *

A New Carded Yarn Era

A NEW era in the marketing of carded cotton yarn began in 1927. Through the establishment of a Code of Trade Practices the market was put upon a different plane from that which it has occupied for a good many years.

Whatever may be said about the manner in which the ideals set forth in this schedule of trade ethics have been lived up to, it must be admitted much of the speculative element which worked against the profitable conduct of the yarn business in the past has been eliminated. It is also admitted there have been violations of the agreement between spinners and yarn merchants, but considering conditions in the industry during the year it is a matter for congratulation that the arrangement has worked out so satisfactorily.

It might be said that the new order of merchandising has not offered the spinner the outlets for his product which he enjoyed under prior conditions. But on the other hand he has not seen the market taken away from him by the speculative dealer who would under other circumstances have owned yarn at a cheaper level than the current asking prices of the spinner or who might have sold the market short and depressed prices below the spinner's basis.

For the yarn dealer the cooperative plan has, by eliminating the speculative factor, removed much of the former cause for mental wrong and actual loss. Holding little or no stock of yarn, except on consignment, and with an absence of short selling it has not been necessary to cover at levels which spelled a loss or at least a cut in commissions.

The new method has meant close contact with the spinner and the necessity of speedier action with regard to offers made by the consumer, but this new relationship has tended toward greater confidence between the producer and the sales end. Although difficulties still exist in bringing about the ideal of exclusive selling agencies for the spinner's output the tendency in this direction has been fostered by the cooperative plan and may be expected to develop in the future.

* * *

A Forecast Confirmed

OF all public nuisances probably the most offensive is the I-told-you-so-man. But is not the source of his offensiveness the fact that he never gives publicity to all of his predictions and is never willing to acknowledge his mistakes?

The business forecaster can hardly be consigned to the nuisance class when he calls attention to the confirmation of his predictions because all of his forecasts are matters of record.

With this preamble we cannot help pointing with pride to the accuracy of our forecast just a year ago of a serious slump in cotton manufacture if record-breaking production was continued into the fall months without drastic and general curtailment. The experiences of 1922-23 and of 1924, as pictured on our cotton industry activity chart, and the slump that followed, clearly indicated what the industry was moving toward.

It is unfortunate that the chart lacks precedents that can be depended upon to forecast the duration of the present slump, for at no previous period was curtailment, although too long delayed, as well directed and as drastic as at present. In previous slumps there was a lapse of about six months from the final peak of the boom to the bottom of the depression. If the present slump could be depended upon to run true to previous form, and August could be accepted as the final peak, then the end of the depression should come in February. This cannot be a forecast of such a result, but merely an expression of hope that it may be.

* * *

Forecasts Without "Ifs" or "Buts"

THERE is one forecast for the new year that can be made with every assurance that it will correct: We predict, without any reservations, that 1928 will be no different from recent unprofitable years for the mill that is in a rut as regards its products and plant methods. There will be no profit in making goods simply because a mill is accustomed to making them without regard to market demands, and stockholders in such mills will still be asking whether the textile industry is ever coming back. It can be stated positively that the profits will go to the mill that is making what the trade is asking for.

Another forecast that can be made without reservation is that mills which continue to bleed the plant and neglect to feed it new methods and equipment will also find 1928 an unsatisfactory year, with their physical values and quick assets shrinking to the vanishing point. Companies which persist in these methods will pass out of the picture as others of this type have done. On the other hand, the mill that keeps in touch with betterments in equipment for each of its several departments, and maintains its plant in first-class order by the introduction of new machinery and appliances, and modern methods in regard to labor and distribution, will forge ahead. The wide awake, up-to-date organization is going to find 1928 a year for profits.

* * *

Building for Competition

DURING recent years the textile industry adopted the highest standards of industrial building construction and equipment. This advancement got its real start while the war was being fought in Europe, and at first was attributed by some to the free spending of easy profits. Many observers expected that the return of normal competitive conditions would see a trend back to less expensive mills. There is no question about the return of competitive conditions, but they have not brought evidence of any tendency to cheap mill construction. On the other hand, probably the chief reason why textile mills are of higher class than formerly is that they are being built to meet competition. It is recognized that when manufacturing skill and merchandising ability are evenly matched, plant conditions are the deciding factor in the success of a mill.

In the present position of the textile industry, a mill must be more than merely a housing for machinery. It must provide for high speeds and close settings of equipment. It must be designed for efficient machine layouts and drives, good lighting, control of atmospheric conditions, and must provide the various services that make a plant function smoothly.

Not only is it recognized that present-day competition puts a premium on efficient mills, but every effort is now made to secure attractive mills. Textile manufacturers have left behind the old notion that beauty of form and utility cannot go together, and the majority of new mills constructed for textile production show thoughtful attention to lines and proportions as well as fitness for manufacturing use. Pleasing appearance has been found to result in a higher morale throughout an organization. Pride on the part of the management carries down through the ranks and insures efficient workers.

* * *

Rayon and Machinery Improvements

WHEN considering the advantages of rayon to the textile industry we should not overlook the influence that the fiber has had on machinery. There are, of course, large classes of preparatory and spinning equipment in cotton, worsted, woolen, and silk mills on which rayon is never processed. On the other hand there is much intermediate and following machinery, such as winding, twisting, warp preparation, weaving, dyeing, and finishing equipment, on which both rayon and one or more of the older fibers are handled. In the case of such equipment, rayon has given a decided stimulus to refinements and improvements. There is no more reason why rayon should be expected to adapt itself to machinery developed for other fibers, than that silk, for example, should be expected to run well on cotton or wool machinery.

Rayon has different properties from the natural fibers. It does not withstand chafing or friction to the same extent as other textile materials, therefore less handling is essential and less contact with machine parts. It does not have the elasticity of cotton, wool, or silk, and therefore tensions must be better controlled with fewer strains and violent shocks. Rayon does not retain its strength when wet as the natural fibers do, so provision must be made for this property. Other differences are also present.

The textile manufacturer and the machinery builder were not long in learning how to get better results with the new fiber and in providing machinery built with the characteristics of rayon in mind. Existing equipment has been refined in design and construction. In many cases new equipment has been developed.

In this work fresh viewpoints have been secured on principles that were considered as fixed and the refinements developed in rayon equipment are being applied to cotton, wool, and silk production with better results than had been secured heretofore. It is probable that the near future will see still greater advancement in all classes of textile machinery, which can be traced directly or indirectly to the use of the rayon fiber.

Broad Textile Improvement Ahead, If Mills Will Adjust Production to Demand

General Outlook Moderately Favorable—Manufacturers Have Future in Their Own Hands

By Dr. Lewis H. Haney

Director of New York University Bureau of Business Research, and Editor of TEXTILE WORLD *"Analyst"*

THE record of 1927 agrees rather closely with the general forecast made by us a year ago. It was not as good a year as its predecessor. The averages for the year were not much lower than the averages for 1926, but the more significant fact is that the *trend* during most of the year was downward. Two years may show the same averages, but if one is characterized by a rising trend and the other by a declining trend, the former will be a better year for the average business man.

Looking Back at 1927

Judged by the averages, 1927 may be said in general to have been about 3% under 1926. For example, the total number of cars loaded with freight last year was 2.6% under the total for the preceding year (Fig. 9). The same conclusion is warranted by the average output of industrial enterprises and by total building construction (Fig. 7). Of course, there were some sharp declines, notably in the case of automobile production which showed a 21% decline on the average. Building permits, too, which represent residential and similar types of building in cities and towns, averaged 10% lower. On the other hand, the output of some industries was larger, as for example, cotton textiles and petroleum.

The sharp decline that occurred *during* the year is illustrated most forcibly by the fact that freight traffic actually declined about 25%. Imports of merchandise were 8% smaller toward the end of the year than at the beginning. Automobile production was actually 53% lower in November, 1927, than in November, 1926.

Financial Expansion

This decline in trend, however, was chiefly confined to the physical volume of business and to net earnings or profits. It is one of the outstanding characteristics of the year that financial activity expanded at the same time that business activity declined. The volume of bank credit increased considerably, the earning assets of the reserve banks increasing about 13% and the loans and discounts of the member banks about 6%. Bank debits were about 12% larger toward the end of the year, and, as everyone knows, the average of stocks and bonds increased largely. During the second half of the year, too, commodity prices showed a moderate upward trend (Fig. 8), although this was chiefly due to advances in farm products and did not benefit manufacturers. In fact, cotton manufacturers were injured by the rather sharp advance that occurred in the price of their raw material.

Forecast

Looking ahead in anticipation of the general business trend it seems reasonably certain that the first six months of 1928 will show improvement. A short initial period of irregularity is to be expected, but business will probably then expand. Signs of an upward trend are already apparent in the steel industry, where increased buying is reflected in a rise in the unfilled orders of the Steel Corporation and in a slightly firmer pig iron market.

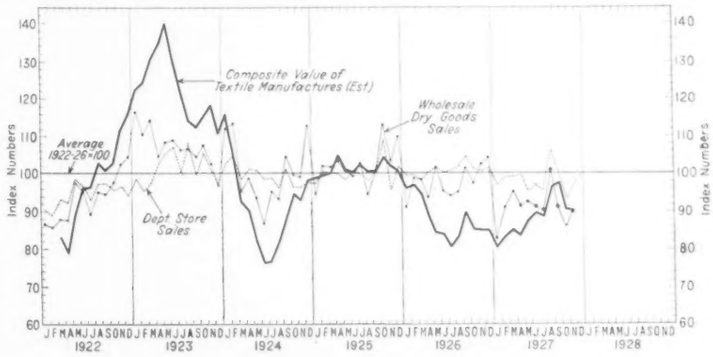

Fig. 1. GENERAL TEXTILE BAROMETER—Wholesale Dry Goods Sales—Adjusted for seasonal variation; 1922-1926 Average = 100; (Federal Reserve Board) Dep't Store Sales—Adjusted for seasonal variation and trend; (Federal Reserve Board) Composite Value of Textile Manufactures (Estimated)—Weighted Composite of Cotton, Wool, and Silk Machinery Activity adjusted for Seasonal Variation and price levels (N. Y. University, Bureau of Business Research).

Favorable Factors for 1928

The conditions favorable to business recovery at the beginning of the new year are as follows: The curtailment of production has gone far enough to reduce supplies to a point where over-production and excess inventories in manufacturers' hands have been largely corrected and buyers' interest has therefore been increased. This more favorable adjustment between demand and supply is reflected in the rise of the P-V Line, with which readers of the *Analyst* are familiar. In the second place, commodity prices are firmer and the upward trend that began in farm products now appears to be affecting an increasing number of industrial products. In this connection, the continued ease in the money markets and the fact that the Federal Reserve ratio is still considerably above normal, indicates that, although some tightness in money rates will develop in connection with stock market credits, the supply of funds for business purposes promises to be ample (Fig. 6).

The rise in farm product prices already referred to has accompanied an improvement in the economic position of farmers and the total value of the crops of 1927 was considerably larger than in the preceding year. The farmers are not enjoying maximum prosperity by any means, but 1927 was a year of improvement and in so far as the farm situation is concerned it makes the outlook for 1928 better than that for 1927 was.

Another point of importance is the continued large volume of retail trade. Retail sales fell off rather sharply after August, 1927 (Fig. 1), but since then there has been a good recovery which is notable in view of the decline in employment in manufacturing. Continued high level of wages enables large buying by consumers.

As to the two industries that have been the leaders in recent years, we find the automobile business rather thoroughly liquidated and about to begin a period of expansion. A large volume of production and sales is expected by this industry and during the first part of the year these expectations will doubtless be realized. This will mean a good demand for steel, rubber, textiles, and non-ferrous metals. The profits of the automobile manufacturers, however, may not be as good as could be desired. Building activity recovered somewhat near the year-end, and indications are it will continue in normal volume.

The more than seasonal gain in the unfilled orders of the Steel Corporation is highly significant. Such an upturn indicates that steel buyers realize that prices are low and it may be taken as forecasting an upturn in this basic industry.

Finally, we note that there is little or no inflation in business proper, and that the financial position of most of the large corporations is very strong. Caution in commitments and hand-to-mouth buying have prevailed in most industries and mercantile inventories are in general relatively light.

Unfavorable Factors

Those who have anticipated a boom in 1928, however, should note that unfavorable factors are not lacking. There is considerable unemployment and the smaller payrolls of manufacturers are tending to reduce labor's purchasing power. Business profits have declined rather steadily and are now small on the average. A few of the leading companies have made good earnings throughout the last year, but a majority of business enterprises have experienced rather steadily declining profits. The volume of new enterprises established, too, has fallen to a low point, and failures are numerous (Fig. 8).

The most serious consideration, however, is the condition of bank credit. This has become clearly overextended, particularly with reference to stock market operations. The volume of brokers' loans is extraordinarily large, and loans secured by stocks and bonds are out of normal proportion as an item in the bank portfolio. The declining trend of the Federal Reserve ratio and a firming in certain classes of interest rates, indicate that temporarily tighter money may be expected in the not distant future. Excesses are occurring in stock market speculation and a period of liquidation is to be expected sooner or later. This may temporarily have unfavorable reactions on business.

Other unfavorable conditions are found in the fact that the physical inventories of manufacturers are in some cases too large for comfort. The increased activity of foreign manufacturers promises growing severity of competition in the world markets for certain products such as iron and steel and some textiles. Finally, the political situation is somewhat disturbed and, while the outlook in this respect does not appear to be seriously unfavorable, there are bound to be periods in which uncertainty will arise and affect business sentiment unfavorably.

Probably, after the stock market and bank credit situation has been ironed out and equilibrium has been restored in this respect, business will go ahead and the year turn out to be

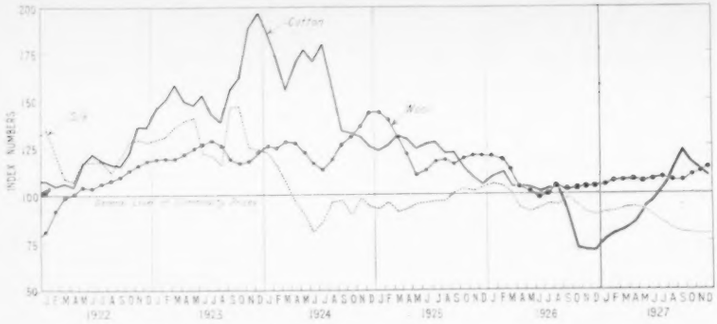

Fig. 2. TEXTILE PRICE LEVELS—Chart shows how chief textile fibers compare (1) with the general level of commodity prices and (2) with each other. The 100 line = average of all commodity prices, and fibers are normally priced when near the general level. The several fiber price curves are so placed that normally they should be close together.

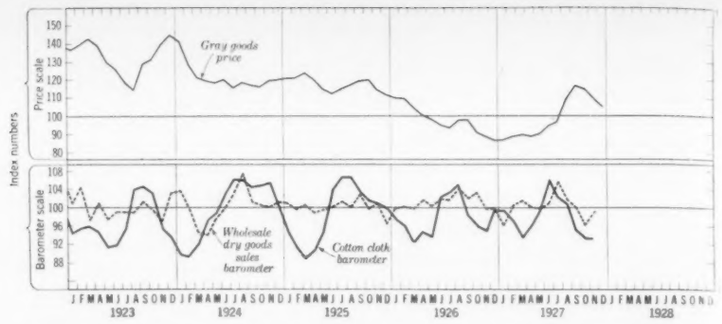

Fig. 3. GRAY GOODS BAROMETER—Gray Goods Price—TEXTILE WORLD Index, 1921 = 100; Cotton Cloth Barometer—Based on relation between orders for and production of cloth; Wholesale Dry Goods Sales Barometer—Based on Wholesale Dry Goods Sales Index of Federal Reserve Board.

somewhat more favorable than 1927 was. It will be remembered that during 1927, financial expansion occurred while business contraction was going on. It seems equally possible that business expansion may go on during 1928, while a period of financial contraction occurs.

Textile Industries in General

As to the textile industry, 1927 was a year of ups and downs. On the whole, there was a good recovery from the beginning through August and then a slump (Fig. 1). We estimate that the total volume of textile manufacturers increased about 12% between January and August, but that in August and October there was a decline of 9%. In November and December the decline was checked and indications of improvement appeared. Wholesale dry goods sales last year were 4 or 5% below the 1926 level, (Fig. 1) but the trend of such sales was, on the whole, rather sidewise with some improvement toward the end. Department store sales averaged about 2% lower. The total value of textile manufactures gained during the year in spite of the sharp setback in October, and toward the end it may be said that it was well adjusted to wholesale dry goods sales and was actually low in comparison with the volume of department store sales. (Fig. 1.)

One notable point was the relative stability of the wool manufacturing industry. The activity of wool manufacturers at no time fell to as low a point as was reached in 1926 and it averaged about the same in the two years. The year ended at about the same level as at the beginning, both in quantity of wool textiles produced and in the total value of such textiles. The manufacturers' operating margins, however, declined. There was a general decline in the silk industry during the year. The quantity of silk textiles produced did not decrease very sharply, but the total value of such textiles did. The cotton manufacturers had their ups and downs, great progress being made between January and October, followed by over-production and a slump. The year ended with sharp curtailment in force.

The general outlook for the textile industry as a whole appears to be moderately favorable. Production has been readjusted to demand, as is seen in the fact that the curve representing the *total value* of textile products has held up better than a curve representing the *quantity* of such products made. The value curve is at a reasonable level in comparison with the sales curves. The danger of overproduction continues, but it seems that manufacturers in most lines are alive to this danger and that operating margins are so low that production will be held in check. If this turns out to be the case, good improvement should be made before the year is over.

Cotton, at Turn of Year

Mill consumption of cotton, allowing for seasonal variation, began to increase in August, 1926, and the price trend was up rather steadily thereafter through September, 1927. (Fig. 2.) Following a growing recognition that the supply of raw cotton was largely reduced, the price rose steadily from December, 1926, through September, 1927, and was thus in an upward trend during three-fourths of the year. Then it was realized that the carry-over was very large and that exports would be reduced. This brought a reduction in prices to the present level, which appears to be about right for equalizing demand and supply. The sharp rise in prices, however, caused a reduction in buying (Fig. 3). The billings of finished goods became excessive in comparison with orders in the fall. Stocks of many kinds of cotton goods accumulated. It was evident that over-production of yarns was quite general. At the same time, manufacturers' profits, which had been inadequate most of the year, tended to decline, for the reason that replacement margins fell below a profitable level. Manufacturers who were operating on cheap cotton were able to make money to the extent that they were "long" of the market, but this as usual served as a disturbing competitive factor.

At the end of the year the trend of mill consumption was downward and there was a general recognition that curtailment was necessary. The prospects may be called fair. ***Under the influence of the unfavorable operating margins and poor earnings, it seems that the efforts of the leaders in the industry to bring production into a better relation with market requirements will get results. Sufficient progress has already been made to give some hope of this.*** The prospects of a comfortable supply and relatively stable prices for the raw material are good. It is to be hoped that reduced mill consumption will keep raw materials at reasonable levels and at the same time allow the manufacturers to get reasonable profits from the sale of yarn and cloth.

Wool, at Turn of Year

As already noted, the wool industry, aside from a little decline in the spring, held fairly steady throughout most of the year, a recovery in the fall bringing activity in this industry up to a point but little under where it was at the beginning. The price of raw wool moved steadily upward from May on, and advanced about 7% (Fig. 2). This advance was due almost entirely to a growing recognition of the scarcity of wool. Wool cloth prices remained practically stable throughout the year (Fig. 4) and worsted yarn prices actually declined. Foreign primary markets were notably strong with a revival of activity in buying by French and German interests, and at the end increased buying on the part of Russia. The demand for wool textiles was hurt by unfavorable weather and by style uncertainties. Also the manufacturers who had cheaper wool held the market down by their willingness to sell below a replacement basis. From May on the replacement margins of wool manufacturers rather steadily sagged.

The improved control over operations that has developed in the wool manufacturing industry is shown by the adjustment of loom activity to the demand for cloth. **(Fig. 4).** ***Stocks of cloth and of garments have apparently been well liquidated. The trend of styles tends to favor an increased use of wool. Were it not for the high price of the raw material, the industry would face the greatest prosperity that it has had in recent years.*** As it is, the demand for wool textiles will be curtailed by the necessarily high prices for such textiles. Production, therefore, can not be large and may have to be curtailed for a time. Sooner or later, however, wool prices will react. This will mean considerable unsettlement in the industry during the first half of the

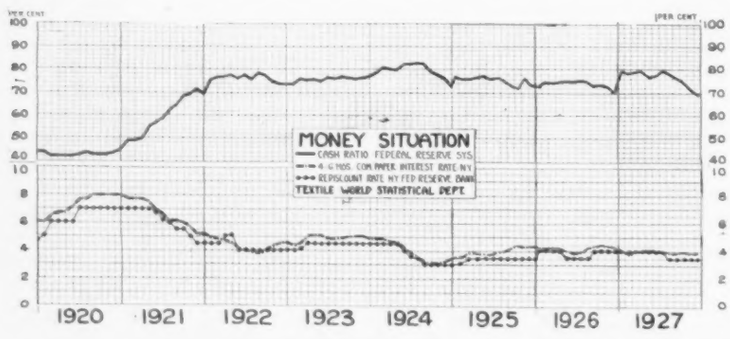

Fig. 6

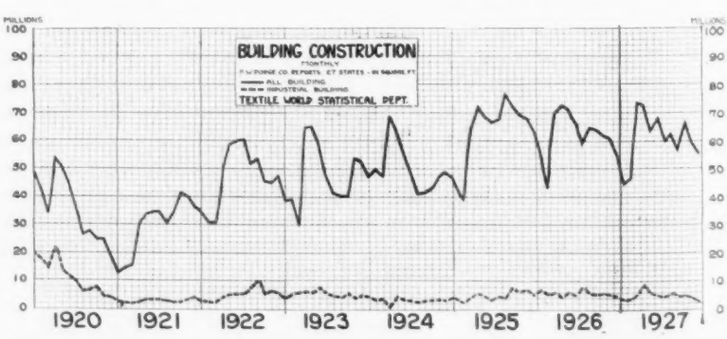

Fig. 7

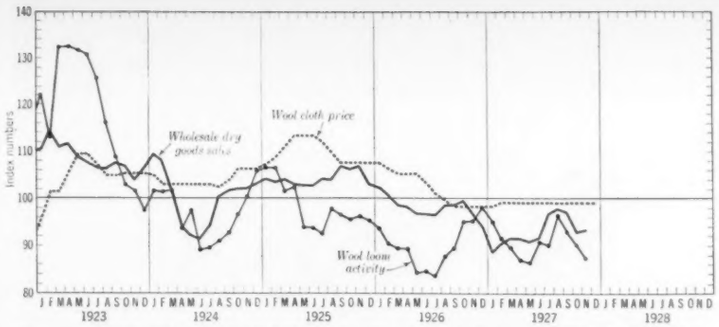

Fig. 4. WOOL CLOTH BAROMETER—Wool Cloth Price—TEXTILE WORLD Index; Looms—Adjusted for seasonal variation, weighted average, Dept. of Commerce; Wholesale Dry Goods Sales—Adjusted for seasonal variation, three-month moving average, Federal Reserve Board; Average 1921–1926 = 100 for all indexes.

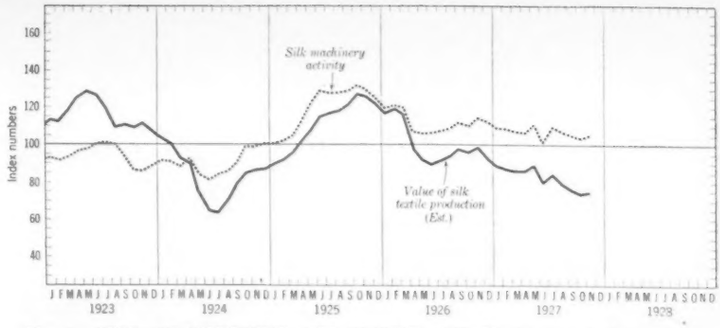

Fig. 5. SILK PRODUCTION AND VALUE—Silk Machinery Activity—Composite of indexes of weighted averages of looms and spindles adjusted for seasonal variation; Value of Silk Textile Production Estimated—Silk machinery activity adjusted for price levels; Average for 1922–1926 = 100 for both indexes.

year. The long-run outlook for the industry appears to be better, but the high price of the raw material means considerable trouble and readjustment for a time.

Silk, at Turn of Year

The silk industry was marked by a large and continued decline in prices during 1927 (Fig. 2). There was a moderate reduction in spindle activity, but broad loom activity held fairly steady. Probably the industry would have been in a stronger position had there been more curtailment in this respect. Imports of raw silk were heavy and "deliveries" were extraordinarily large. As a result there was an accumulation of storage in this country which is the largest since 1924. Compared with machinery activity, the deliveries were the largest on record and indicated a very large accumulation of silk in the hands of the mills or others to whom the reported deliveries may have been made. Total stocks of silk in Japan and in this country are still in excess of requirements. The fact that the total value of silk textiles produced declined considerably more than the quantity of such textiles tells the story of continued over-production (Fig. 5).

In the second half of 1927, wholesale silk sales at New York, despite the lower prices in silk textiles, held above those of the first half. In this respect, however, the year ended less favorably, though the sales of silk textiles are fairly good when compared with spindle activity.

The total stocks of raw silk (New York and Yokohama combined), though still large, have been reduced considerably. The Japanese are apparently taking effective measures to stabilize the market. ***It will take some months for the operation of these factors to correct the situation and to supply a strong basis for the industry. Some further reaction in silk prices seems probable in the spring. In this industry, however, as in the other leading textile industries, it seems reasonably clear that conditions have gotten about as bad as can be and that a growing appreciation of this fact by the manufacturers is tending to induce policies that will make for improvement.***

One item not dealt with separately by the TEXTILE WORLD *Analyst* is the rayon industry. All indications are that the production of rayon will continue to increase and that extraordinary efforts will be made by those in this industry to expand the use of their product in 1928. Fortunately this industry is in the hands of a relatively few large companies and these companies are inter-related so that the business will be handled intelligently. In other words, no prolonged period of price cutting is probable in the case of rayon. The silk manufacturers, however, will do well to recognize the growing importance of the artificial fiber as a substitute for raw silk.

The Question for 1928

In general summary, it may be said that the prosperity of the textile industries in 1928 will depend very largely upon the intelligent direction of the various enterprises within those industries. Steel manufacturers, automobile manufacturers, and other well organized industries, recognize that a balance between their production and sales departments is one of the vital essentials. They recognize that competition must be reasonable and that production must be adjusted to consumption. They have learned how to operate accordingly. If the leaders in the textile industries will adopt the same methods insofar as is possible and will cut their cloth to the coat, as it were, there is no reason why the industry should not be placed in the strongest position this year that it has occupied in many a year past. It used to be the case that the textile industries rather faithfully followed or even led the general trend of business in its cyclical ups and downs. The prospects for general business during the next year are good and a rising trend is anticipated. Will the textile industries not take the steps that are necessary to allow them to share in the general prosperity?

How "Analyst" Forecast 1927

Cotton Prices

Raw:—In December 1926, when cotton was about 12½c, the *Analyst* predicted an early recovery to 13½c–14.00c. In January, bottom was said to have been passed. In March and April no sustained advance was considered likely. In May stronger prices were forecast with values likely to work a cent higher (to 17c). In July higher raw was predicted with 18c called reasonable. In August fluctuations were predicted around 18c subject to crop conditions. In September, October and November, 20c was said to be a fair price and anything above that level as highly speculative. In December 19c seemed to be about right for near future.

Yarn:—In December 1926, yarn was called weak, but stability was looked for within a month or two. In early 1927, weakness was expected, but in February stability was considered probable. From March through May firmness, but no advance was forecast so long as overproduction continued. In June the *Analyst* said yarn must sell higher. In July the advance was thought likely to continue, but slowly. In August and September, higher prices were said to be in order. In October the prediction was for fairly steady yarn. Weakness was forecast beginning in November.

Cloth:—In December 1926, cloth was said to be weak with possible stability in a month or two. The January forecast was that prices would be well maintained. Stable to strong markets were looked for in February, March, April, and May. From June to October higher cloth was predicted. In October steadiness was looked for. Weakness was predicted in November and December, with firmness looked for at the end of the year.

Wool Prices

Raw:—In late 1926 and early 1927 the *Analyst* stated that a declining trend would be seen during the next few months. Stability followed by further declines was predicted in February, March, and April. In May moderate further declines were looked for. In June stable prices were considered probable. Since July the forecasts have been for higher raw wool. During the summer moderate advances were looked for and by September rising prices were forecast for two or three months. The December prediction was for higher raw wool till spring.

Yarn:—In December 1926, the *Analyst* predicted declines in the near future. The January forecast was continued weakness for another month or two. Probable advances were looked for in the spring. In April recovery was looked for, but doubt was expressed that gains could last long. In June yarn prices were said to be at bottom levels and likely to advance before fall. In July ad-

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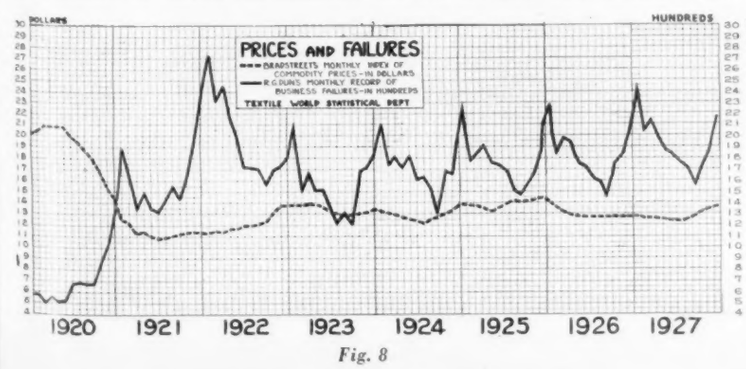


Fig. 8

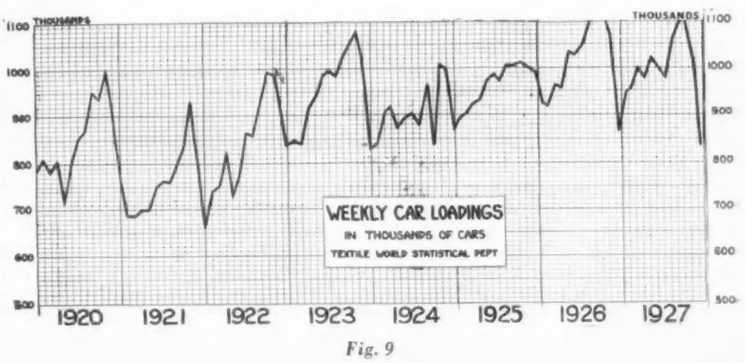
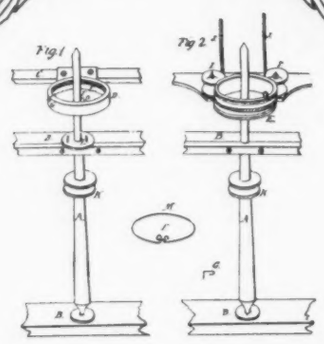


Fig. 9

1828 1928



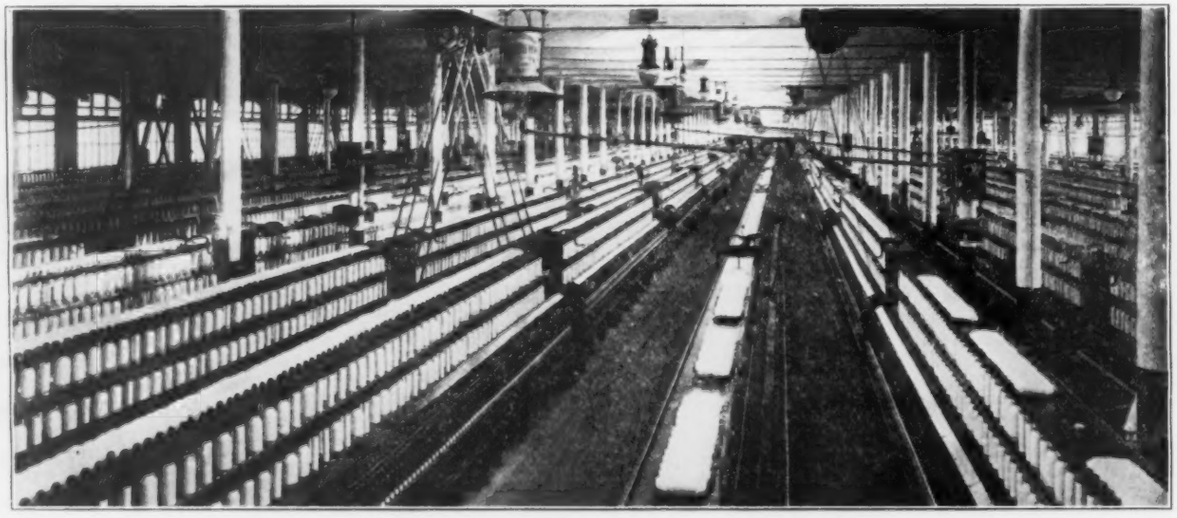
HONORING
JOHN THORP

American Inventor of the Principle of Ring Spinning

A MORE Radical Departure from Hand-Spinning Methods Than Arkwright's Water Frame or Crompton's Mule and of Greater Permanent Value to the World as Measured by Its Present Commanding Leadership in All Branches of the Textile Industry.

Enwreathed above is Thorp's patent of Nov. 20, 1828.

Below is a modern ring spinning room equipped with Whitin Frames.



1828 1928

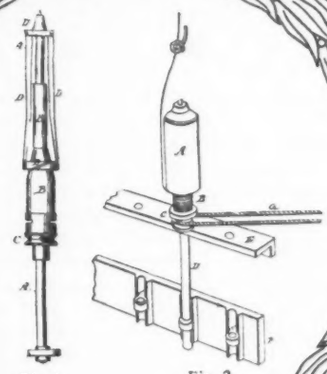


Fig. 1 Fig. 2

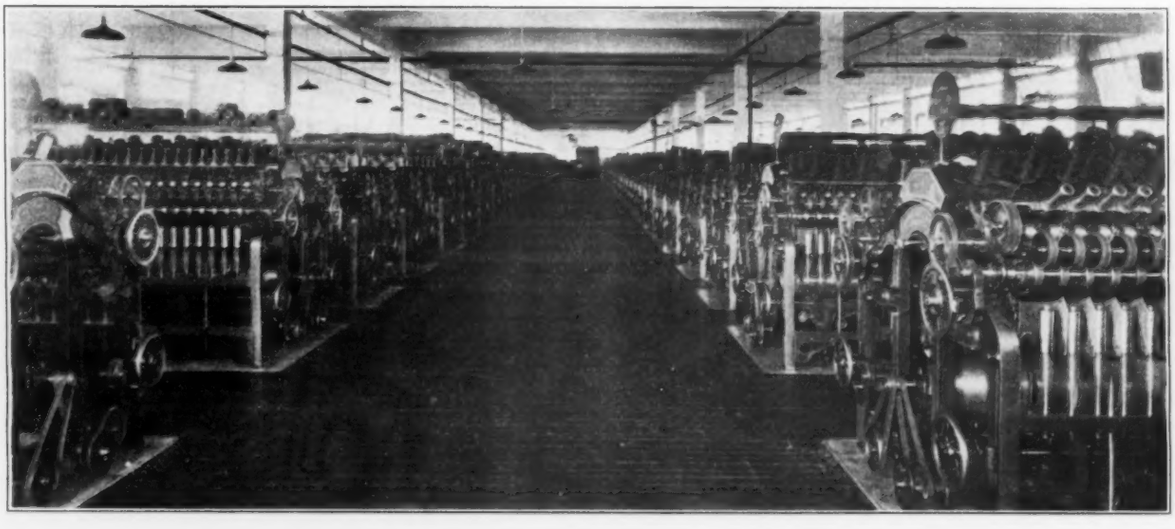
HONORING
CHARLES DANFORTH

American Inventor of the Principle of Cap Spinning

DANFORTH'S Basic Patent Was Applied For June 11 and Issued Sept. 2, 1828. It was Introduced into England in 1830. He Was Born in Massachusetts in 1797, was a Successful Manufacturer of Machinery as Well as Inventor, and on His Death in New Jersey in 1876 Was Considered the Country's Greatest Authority on Cotton Spinning and Its Machinery.

Fig. 1 in the wreath is Danforth's patent while Fig. 2 is a cap patented by John Thorp Nov. 25, 1828, and is the construction now commonly used.

Below is a modern worsted spinning room with Saco-Lowell frames.



The Wool Institute to Take Its Place Among Collective Agencies for Trade Advancement

Organization Planned on Basis of Cotton-Textile Institute Procedure

By V. E. Carroll

IT has been evident for a long time to the leaders in the woolen and worsted industry, and especially to those who have made a particular study of the situation, that something should be done collectively to improve conditions. Efforts have been made spasmodically to accomplish this end. It is probable that if there had been no associations in this field it would have been a comparatively simple problem to effect some coordinated move which would comprehend the majority of the industry. The two associations—the National Association of Wool Manufacturers and the American Association of Wool and Worsted Manufacturers—are organizations of long standing. They have done constructive work and have accomplished tangible results in their own particular fields. Effort, however, has not been coordinated upon a single entity for the best interests of the industry as a whole.

Industry Divided

Members of this industry are divided practically into three classes and these classes comprehend not only the manufacturing end but the selling division as well. Certain individuals are members of both associations. The second group comprehends the larger number—members of either one or the other of these organizations, while the third group consists of those who are not affiliated with either. It has been difficult, therefore, to amalgamate the various interests on a common basis to work for a common end. It is recognized there is nothing which a central organization, be it called by the name of institute or by any other name, could do which either of the associations could not do if it represented a large proportion of the industry. It is because of this condition that the best minds in the trade have felt the necessity of making an effort to see what could be accomplished through coordination.

History of Industry Effort

The woolen and worsted industry began the year 1927 with an event fresh in their memories that might very possibly have discouraged the majority from making further efforts along coordinated lines. The collapse of the Wool Council in the fall of 1926 meant a temporary setback to industry consideration for common action. This collapse was due not to the failure of the industry to be convinced that general action was necessary, but largely in the belief of those interested in its inception in the fact that it was too inclusive, comprehending as it did weavers, spinners and the wool trade, the problems of each division being sufficient alone for specific organizations to consider. Another factor which brought about the demise of this effort was that in some way or other attention seemed to be primarily centered on the matter of publicity in the belief that development of such a species of activity possessed curative powers that would issue in the solution of the underlying difficulties of the situation. It is also believed by many in the trade that the endeavor to unite the two main subdivisions of the industry—the manufacture of men's wear and of women's wear in one program without recognition of the peculiar difficulties attaching to each was basically wrong and not calculated to accomplish results.

The Whiteside Movement

After the passage into history of the Wool Council no broad movement was undertaken by the industry until the so-called Whiteside Meeting held in June of last year. This conference was called together by A. D. Whiteside, President of the National Credit Office, whose intimate relations with the industry and study of its problems convinced him that something might be done by the trade as a whole. In pursuance of this purpose he presented a picture to the above meeting from the viewpoint of an interested observer, in the hope that by such presentation he might stimulate leaders to action. The result of the meeting was the appointment of two committees, one on distribution and the other on production, of 20 members each. These committees in turn selected sub-committees, the production committee appointing a committee on cost finding and the distribution committee selecting subordinate committees on price maintenance and publicity. Various meetings of these committees were held with comparatively little fruitful result. It was soon realized that in a sense they had no particular standing in the industry. They were arbitrarily appointed and there was no central organization to which they could report. While they arrived at certain conclusions there was no means of confirming such conclusions or of putting them into effect. This was particularly true of the price maintenance and publicity committee; their studies were interesting and it is believed that the deliberations provided a fund of information that may be useful to any eventual organization.

Joint Committee Appointed

This state of indefiniteness finally led to the appointment of a joint committee representing the two associations, who agreed to recommend to the governing bodies the selection of twelve individuals to study the problem and bring in recommendations. That committee recommended the formation of the Wool Institute and suggested to the governing boards of the two associations the endorsement of their plan. This endorsement was forthcoming with the result that a committee of eighteen, consisting of six representatives of the National Association, six of the American and six representing outsiders was approved to formulate detailed plans for the new institute.

The result of their deliberations has been the filing of a certificate of incorporation of the Wool Institute, Inc. A meeting of the incorporators will be held within a few days to select officers and to develop plans for the incipient organization. The certificate follows:

Certificate of Incorporation

We, the undersigned, desiring to form a corporation under and by virtue of the provisions of the Membership Corporations Law of the State of New York, do hereby certify:

FIRST: The name of the proposed corporation is THE WOOL INSTITUTE, INC.

SECOND: The particular object for which the corporation is formed is to promote the progress and development of the wool industry.

In furtherance and not in limitation of said purpose, the corporation shall have power:

To carry on or assist trade researches, investigations and experiments in connection with the manufacture and marketing of wool products;

To issue publications and circulars, and in any other manner to inform the public and the trade as to the results of such studies, investigations and experiments;

To collect and disseminate trade statistics and information so as to enable each manufacturer to conduct his business free from misdirection by false or insufficient information, particularly concerning the following matters, to-wit:

(a) The expansion of domestic and foreign markets for wool and wool products.

(b) The development of new uses for wool and its products and the utilization of waste products of the industry.

(c) Information concerning credits.

(d) Information concerning freight rates affecting this industry.

(e) Statistical information as to production, stocks of goods on hand, and shipments.

(f) Improved methods of manufacture or distribution.

To prepare the wool industry for mobilization in national emergencies.

To extend voluntary financial or other aid or assistance to and to cooperate with such private or governmental bodies, corporations, associations, institutions, societies or agencies as are now or may hereafter be engaged in whole or in part in furthering the purposes above named and in general to use any and all lawful means for the advancement of the wool industry.

Membership in the Institute shall be recognized as implying that the member is absolutely free to conduct his business as he pleases in every respect and particular.

THIRD: The territory in which the corporation's operations are to be principally conducted is the United States of America.

FOURTH: The principal office of the corporation is to be located in the Borough of Manhattan, in the City, County and State of New York. The annual meeting of the corporation shall be held on such dates as may be fixed by the By-Laws.

FIFTH: The number of its directors shall be (30) thirty.

SIXTH: The names and places of residence of the persons to be its directors until its first annual meeting are as follows:

Raymond S. Bartlett	American Woolen Co.
Franklin W. Hobbs	Arlington Mills
R. Leland Keeney	Somersville Mfg. Co.
Percy Ainsworth	Hockanum Mills Co.
Max W. Stoehr	Botany Worsted Mills
Frederic W. Tipper	Deering Milliken & Co.
William A. Broadhead	Jamestown Worsted Mills
William H. Folwell	Folwell, Bro. & Co.
Lewis A. Hird	Samuel Hird & Sons
Nathaniel Stevens	M. T. Stevens & Sons Co.
Addison L. Green	Farr Alpaca Co.
Edwin Farnham Greene	Pacific Mills
Alexander Walker	Strong, Hewat & Co.
Edward Moir	Crown Mills
Allen R. Mitchell, Jr.	Shackamaxon Mills
Arthur D. Whiteside	Number 2 Park Avenue

SEVENTH: All of the undersigned subscribers to this certificate are of full age and citizens of the United States, and one of them, Alexander Walker, is a resident of the State of New York, residing at 924 West End Avenue, New York City.

Of the persons named as directors, at least one, namely, Alexander Walker, is a citizen of the United States and a resident of the State of New York.

EIGHTH: This corporation is not organized for pecuniary profit.

IN WITNESS WHEREOF, we have made, signed and acknowledged this Certificate this 25th day of January, 1928.

It will be noted the provisions of this certificate follow very closely the plan outlined and followed by The Cotton-Textile Institute, to whom those in charge of details of the new organization admit their indebtedness for suggestions as to the plan to be followed. It is understood that participation in the Wool Institute by manufacturers will involve a yearly payment based on the number and width of looms operated and it is hoped that the full details of organization will be presented at an early date.

Outlook Fully Up to Last Year

By C. F. Broughton

Treasurer, Wamsutta Mills, New Bedford, Mass.

The outlook for our branch of the textile industry for 1928 is fully up to last year, if not better.

The Cotton-Textile Institute Gains New Members And Its Activities Increase

Encourages Closer Individual Study of Supply and Demand

By George A. Sloan
Secretary of The Cotton-Textile Institute

An adequate review of the textile industry as a whole during 1927 could not be made without some mention of the activities of The Cotton-Textile Institute, Inc. Nor would any forecast for the year 1928 be comprehensive if the potentialities of this organization were not taken into consideration. The new attitude on the part of the mills, for which the Institute is so largely responsible, promises to have an even more far-reaching and direct effect on progress in the cotton textile industry than it did during the first year of its existence. The following resume, written by Mr. Sloan, brings up to date those activities of the Institute which were so fully outlined by Walker D. Hines, president of the Institute, in his address to the members at the second annual meeting last October.

ALTHOUGH the value of any trade organization to the industry which it serves depends upon the extent of its accomplishments, the numerical growth of its membership is an index of the recognition being accorded its efforts by the industry. Consequently it is encouraging to note that 34 new mills have been added to the roster of the Institute since its first annual meeting in 1926. Of these 29 joined prior to the second annual meeting in October, 1927, and 5 since that date. With these additions the Institute now includes in its membership 452 firms and corporations operating a total of 505 mills and representing over 21,700,000 spindles.

This increase in membership has largely followed the formation of new Groups. As individual mills come into more direct contact with the operations of the Institute through these Groups they are more likely to recognize the value of active participation which is encouraged in every possible way through the functioning of the Institute. The manufacture of various fabrics involves distinct types of problems, and it was early realized that the most effective way of dealing with these problems would be through the medium of group activities. I believe this practice has been justified and in addition has served as an important membership impetus.

Adapt Production to Demand

It was natural that much of the work during the organization of the Institute consisted in the laying of foundations for future progress. Broad economic changes can not be effected in any industry over-night. Consequently it was to be expected that results during the Institute's first year would be of an intangible but constructive nature. With the coming of the second year, however, definite evidences of progress have become apparent, foremost among which is the attention which individual mill executives are now giving to the relationship of production and demand. As a result of a careful study of the available statistics on supply and demand an intelligent adjustment of production to market requirements is gradually being made by the mills.

In his first formal address to the industry at Atlantic City, last May, Walker D. Hines, President of the Institute, directed attention to this important problem, and reiterated it in his report at the second annual meeting in October, 1927. The promptness with which the problem was acted upon and the extent to which readjustments have been recently made reflect in some measure the new spirit which the Institute has tried to foster in the industry. In encouraging mills to operate more in line with demand the Institute conceives its function to be that of an educational and informative medium. It can do nothing more, and desires to do nothing more, than to supply its members with the most accurate, complete and up-to-date data and to build up an industry-wide recognition of the economic importance of this information.

However, it is not only the statistical background which has helped the mills in the growing realization of the necessity for them to gauge their production in accordance with the demand rather than in accordance with the maximum capacity of the mills. There is a psychological significance attached to an organization such as the Institute, created by the mills themselves and financed by them, which cannot be overlooked. The Institute, in other words, is the tangible expression of the desire on the part of manufacturers themselves to operate more closely in line with economic laws. Consequently its educational and promotional activities are not to be regarded as extraneous but as the functional expression of the mills themselves.

Departmental Activities

The encouraging of a proper balance between supply and demand is only one of the many phases of the Institute's activities; in fact, it may be regarded as a direct result of one or more of its main functions.

The headquarters office of the Institute in New York is now carefully departmentalized so that we have experts in charge of the important activities such as those dealing with new uses of cotton, statistics, cost research, merchandising investigations, etc.

Statistical work is of course a basic part of the Institute's program since its findings are utilized by all other sections. In this work the Institute has had the cooperation of many organizations and individuals, but particular credit must be given to the Association of Cotton Textile Merchants of New York since that organization was an active source of statistical information when the Institute came into being and is still functioning constructively in this direction.

George A. Sloan

The cost studies which we have undertaken probably represent one of our most important activities for it is an accepted business maxim today that a sound knowledge of cost principles is essential to the development of economic progress. I will not attempt to dwell upon this subject here since it is covered in detail by Mr. Hines in an article published elsewhere in this issue.

The work which the Institute has undertaken in studying new uses for cotton goods is not of a type which can be concluded hastily because the discovery of a new use is but the first step in the development of a new market. Besides which the name "New Uses" does not do justice to the work of this section inasmuch as its studies extend to the development of existing uses of cotton textiles both in the domestic and export markets. Such questions as price comparison with the material now in use, total amount involved, adaptability to existing manufacturing requirements, must be carefully considered in all commercial research investigations of this character. However, the New Uses Section of the Institute has many studies in progress and out of these should come more and more opportunities for textile mills. The work of the Institute, in this connection, is closely related to the new uses investigations being made by the United States Departments of Agriculture and Commerce.

Intra-Industry Cooperation

Without going into detail regarding the other activities of the Institute, such as the development of the Code of Trade Practices for the Carded Yarn Group, matters of simplification and standardization, etc., I want to conclude this brief resume with a statement regarding the cooperation among the mills and with other related branches of the industry which is now being realized.

Tribute must first be paid to the spirit evidenced by members at large. Instead of losing the enthusiasm aroused at the time of the organization of the Institute, manufacturers have become more and more impressed with the value of cooperative effort and have contributed increasingly constructive thought to it. They have not left the burden on the shoulders of the officers, or the Executive Committee, or the Board of Directors or any other group of individuals. The industry has shown a collective spirit of support without which the functioning of the Institute would have been partially and perhaps wholly ineffective. There is every indication that this attitude will continue and it is the best assurance of continued success that an organization such as the Institute can have.

Intra-industry cooperation in the cotton industry at large is a new appreciation of the interdependence of all groups from cotton growers through the mills and distributors of

(*Continued on page 244*)

Movement of Northern Cotton Mills to South in 1927 And Summary for Last Six Years

Approximately 100,000 Spindles and 2,000 Looms Moved Last Year — About 1,000,000 Spindles Since 1921

By Henry G. Lord
President, TEXTILE WORLD

THE past year has seen a continuation of the trend of northern cotton manufacturers to establish branches in the South, although to a lesser extent than in previous years. In 1927 nine more northern mills have established southern branches, of which seven are moving from New England, one from New Jersey and one from New York. There are under 100,000 spindles and 2,000 looms in these mills. The list is shown in the accompanying table.

Besides these branches of northern mills established in the South, there has been at least as much more machinery moved from northern plants in the process of liquidation and this movement will continue into the present year as there are several important transfers projected, such as the 100,000 spindles to be taken from the Everett Mill and set up in ten separate units in Alabama and the probable removal of 30,000 additional spindles to the Appleton in South Carolina as well as additional machinery moved from the northern mills of Manville-Jenckes Co. There are also several entirely new promotions which will be equipped with machinery from northern mills, and the Chicopee Mfg. Co., a New England concern, has built an entirely new mill in Georgia.

Estimate of Northern Decrease

During the last six years approximately 80 cotton mills in New England, New York and New Jersey have gone out of business and have liquidated or are in the process of liquidating their plants. This does not include the branch mills and equipments that have been transferred as complete units to the Southern States. The machinery in these plants has for the most part been scrapped or sold in small units to other mills in the North and South.

There are about one million spindles now idle in northern mills that will probably not start again, and there have been about 700,000 spindles moved South by northern plants during the past six years, operating under the old management, and probably about 300,000 spindles taken from northern plants by southern mills.

When these spindles reach the South they are usually operated day and night and, therefore, become equivalent to 2,000,000 spindles.

The total number of operating spindles in the northern States today, after making allowances for the addition and replacement in northern mills, and estimating 800,000 spindles already scrapped in the past six years, is approximately 2,800,000 less than it was in 1921 when the movement first began in full force. This is approximately 14% decrease in the spindleage in northern mills.

It is conservative practice to allow at least 3% depreciation on machinery. Over a period of six years this would amount to 18%, so it might be considered that even under normal conditions there would have been a depreciation and break-up of approximately the same percentage as the decrease in New England spindleage that has taken place, but whereas in normal times this depreciation would have been made good by replacement, the textile situation in New England has not been such as to encourage the investment of new capital.

Community Activity a Factor

While it is true that advantages in the way of labor, factory laws and taxation have been very important factors in the removal of old plants and the location of new ones, it is also true that the aggressive and intelligent presentation of the advantages of the South by the different communities, the power companies and other interests in developing the resources of the different States has been equally influential in stimulating this growth. This will probably continue. In most cases the northern communities have done little or nothing to counteract these influences.

The Census Bureau reports 36,336,512 spindles in place in November, 1927, of which 18,155,218 are in Northern States and 18,381,294 in the cotton growing States. There were 36,047,000 in 1921, of which 20,338,379 were in the North, but at no time during the past six years have more than 34,500,000 (1923) been in operation and for the most of the time not over 33,000,000, even when there is a normal demand for goods. The census still gives 18,155,218 spindles "in place" in northern mills, but I think the real spindleage from the viewpoint of probable operation is more nearly 17,520,000. There will always be from 5% to 10% of the potential spinning capacity that is idle.

It is evident that the demands of increased consumption when they have occurred have been met by overtime work rather than by the addition of new machinery to replace that which has been abandoned in the North.

Outlook for Future

It is probable that during the last six years the textile machinery builders of standard spinning machinery, not including looms and special machinery, have not operated at more than 45 to 50% of capacity during this time. It has been estimated that the capacity of the American shops building carding and spinning machinery is one and one-fourth million spindles per year.

If that is true, the new machinery and replacements in cotton mills annually since 1921 have averaged about 1½%. In the meantime the population has increased, the mechanical and industrial uses for cotton are constantly expanding and more than offsetting the lessened demand for clothing and the inroads made by rayon. The manufacturers have met this situation by operating their mills overtime and by increased production through more efficient operation. Replacements and additions have to some extent been made from available good machinery that has been taken out of the northern mills.

It would seem as if this situation must be nearing an end. Most of the available good machinery in the northern mills which have or are to be liquidated, has been used. Machinery that is working overtime wears out twice as fast and the time can not be so far off when the depreciation of machinery will necessitate a thorough overhauling of many mills in the South as well as in the North, and the replacement by new machinery if they are to avoid the fate which has overtaken other mills which have failed to keep their plants up to modern standards. There are out-of-date and run-down mills in the South as well as in the North and for such mills the advantages in economic conditions which have enabled them to hold their own against manufacturers less favorably situated will disappear if they are unable to meet the competition of better equipped mills.

I feel that the time is approaching, if it is not already here, when the question of equipment, merchandising and management will be the determining factors of successful operation.

The southern trend has been more marked in other branches of the textile industry during 1927 than in the cotton division.

The labor situation in the full fashioned hosiery industry in Pennsylvania has led to the establishment of a number of full fashioned plants in the Carolinas and in Tennessee. There have also been a number of silk mills which have removed to the South, as well as miscellaneous industries, such as narrow fabric, draperies, art goods, upholsteries, etc. There has been a large development in the rayon industry and several very big plants are under construction or contemplated in Tennessee and Virginia by the Bemberg, Glanzstoff, DuPont, Viscose, Industrial Rayon and one or two new promotions.

In the aggregate the growth of the textile industry in the South during 1927 has kept pace with recent years, but a study of the Annual Report of New Mill Construction, published in another part of this issue, will show that the growth of the textile industry has not been confined to any one section of the country.

NORTHERN COTTON MILLS THAT HAVE ESTABLISHED BRANCHES IN THE SOUTH DURING THE PAST YEAR

The Connecticut Mills Co. transferred 32,000 spindles from Globe Mills at Fall River and 50 looms from Danielson, Conn., to the new plant at Decatur, Ala.

The Gagner Mfg. Co., Adams, Mass., moved to Statesville, N. C., 60 looms; fancy dress goods.

West Boylston Mfg. Co., Easthampton, Mass., transferred 30,000 spindles to Chisholm, Ala.

Lambeth Rope Corp., New Bedford, Mass., established branch plant at Charlotte, N. C., with 20 looms.

Slater Mills, Webster, Mass., establish branch plant with 10,000 spindles and 720 looms at Marietta, S. C.

Keene Artistic Narrow Web Co., Keene, N. H. Moved 40 looms to Goldsboro, N. C.

Crompton Co., Crompton, R. I., established new branch at Waynesboro, Va.

Dundee Textile Co., Passaic, N. J., transferred 108 looms to a branch at Lynchburg, Va.

Titus Blatter & Co., New York, transferred 70 looms for drapery material to new branch established at Charlottesville, Va.

Southern Expansion a Working Demonstration Of New Order of Decentralization

Section Has Profited by Economic Change and Is Applying Science to Solution of Coincidental Problems

By Douglas G. Woolf

TO one who has been traveling Southward year after year during these recent years of textile expansion, the development of that section is possibly more inspiring than it is to one who visits the South only infrequently for it offers an opportunity to study, within a comparatively small compass, the industrial changes which to-day are world-wide in scope.

To state it briefly, the textile South of 1927 is a working demonstration of the new order of industrial decentralization. We have referred to this indirectly before but the point deserves re-emphasis since never in the past has it been so evident as to-day.

Many believed that it would be possible to continue on for centuries with one section supplying the needs of other sections hundreds or thousands of miles away. They thought that Lancashire and Yorkshire in England could economically meet the requirements of far-flung colonies. They imagined that New England could furnish manufactured articles indefinitely to the South and the West.

However, economists were aware that the days of sectional centralization of industry were numbered.

The contributing causes of this change were many. The primary one was the awakening consciousness of all peoples to the fact that they were not pre-determined to be exclusively agricultural or exclusively industrial—and, further, that they were not doomed always to produce solely one or two types of natural or fabricated materials. A monotonous succession of lean years, when prices were high but when they had little to sell, and fat years, when produce was abundant but prices ruinously low, taught the farming sections this lesson. Similarly, the exclusively industrial localities have learned that unusually large profits could be wiped out by excessive prices which they were forced to pay for the necessities of life.

Self-Maintenance the Ideal

As a result, all sections have come to the conclusion that the ideal to approach is self-maintenance. They are realizing that New York or Chicago or St. Louis has no divine right as a distributing center for territories of hundreds of miles in radius. They have learned also that time-honored water-power rights have been nullified by modern long-range transmission of hydro-electric power.

This knowledge has struck all parts of the world simultaneously. The receptiveness to it has been aided by the physical and educational progress of previously submerged peoples. To this progress, transportation development has contributed most.

Of all sections which have profited thereby, the Southern States of this country have been the greatest gainers. Rich in agricultural possibilities, in potential sources of hydro-electric power, and particularly in type of man-power, they have overcome the handicaps which were an aftermath of the Civil War and have built up an industrial and mercantile structure which needs no apologies so far as comparison with other parts of the country are concerned.

Coincidental Problems

Naturally such a development, compressed largely within a quarter of a century, has not been realized without the intrusion of many broad problems. Some of these are in process of solution and others have still to be met.

Taking up the industrial phase specifically—and particularly that of textile manufacture—the principal dangers which have threatened and have had to be faced, are the following:

(1) Indiscriminate location of enterprises without due regard to their fitness for, and absorption by, the communities in which they were located.

(2) Lack of diversification of industry similar to the lack which had previously existed in agriculture.

(3) Sporadic growth of many small and economically unsound units.

(4) Tendency to install worn-out machinery in new units; and failure to maintain the productive efficiency of older units.

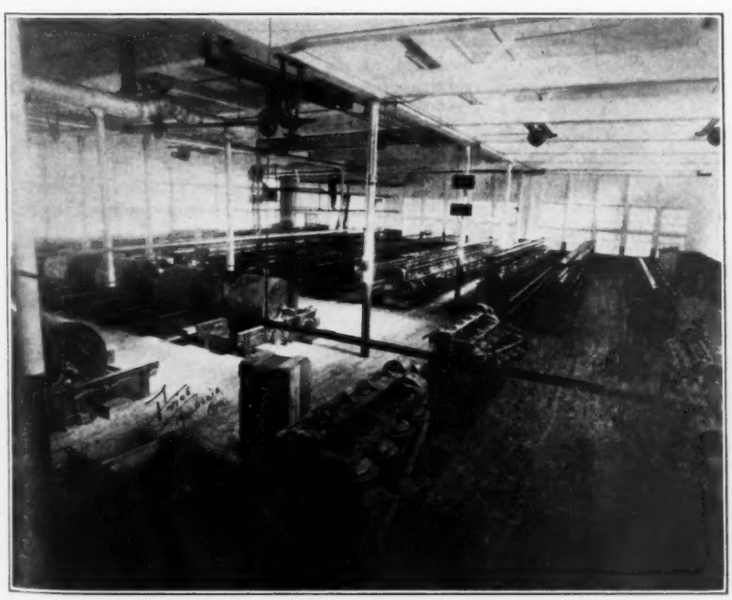
(5) Over-production of many types of products due partly to the natural enthusiasm of growth and partly to the practice of night operation.

The Mill and the Community

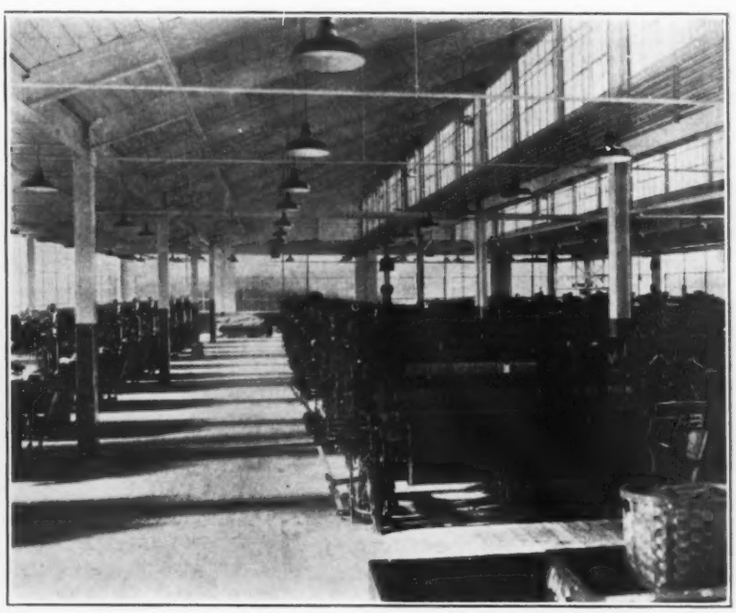
Of all these, the most important, in the writer's opinion, is the relation of new enterprises to the communities for which they are projected.

The South has witnessed during recent years the two extremes in community adaptation. There have been instances of the most flagrant violation of economic laws in the attempts on the part of various sections to attract new enterprises. On the other hand there have been examples of aggressive and scientific community direction which cannot be matched in any other part of the country.

The latter type is very much on the increase at the present time. One of the most interesting studies the writer has ever pursued has been that of the trend in community direction in the South. Probably the majority of so-called industrial campaigns were started originally with the single purpose of increasing the local pay-roll and thereby booming the mercantile development of the section. All sorts of propositions were made to prospects and an analysis of many of these would have indicated to the community that the game it was playing was



Textile Expansion Extending Into Arkansas: Interior View of New Magnolia (Ark.) Cotton Mills



Old Established Plants in South Are Expanding: View in New Weaving Building of Charlottesville (Va.) Woolen Mills, Makers of Uniform Cloth

one of "Heads you win, tails I lose."

In fact this was soon realized and the "blue sky" type of community activity is rapidly becoming extinct. In its place is growing up a sound attempt to attract only such enterprises as fit in economically with existing industry, with balance of labor supply and particularly with present and probable future trends in population, living costs and wage levels. Many community campaigns have had this ideal from the start but far many more are acquiring it today.

The passage of the "blue sky" tendency does not mean a decrease in southern community effort. It means rather an increase — only along sounder lines. The writer has stated before that this type of endeavor had not reached the exactness of a science. This is still true but it may be stated that the activities of communities in the South are hastening the day when such a basis for action may be realized. This development is one of the outstanding trends in our national life and one which other sections of the country can well afford to emulate.

Industrial Diversification

Closely linked up with this question is the problem of diversification of industry since one of the products of more scientific community directing has been the realization that manufacture as well as agriculture cannot be confined to a single product.

Consequently we find today that those communities in the South which have specialized in male-employing industries are today attracting textile plants which will give opportunities to the female portion of the population. Similarly the cotton mill town has its eyes on other quite different enterprises as adjuncts.

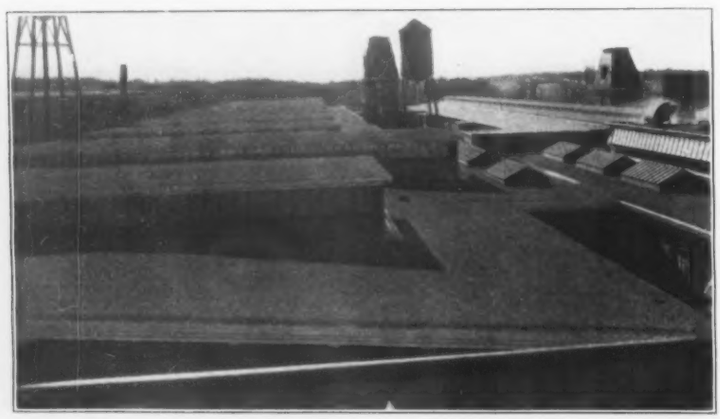
Within the textile industries specifically, there is a tendency toward radical diversification. For years this was a pet theme at conventions but was little more than this. Today it is an active working principle, the operation of which may be witnessed throughout the South.

Not only have cotton spinning plants been supplemented by weaving mills and finishing plants, but manufacturers of knit goods, silk goods and many textile specialties have located in the Southern States. In fact this movement is more marked today than is that of staple cotton manufacture. It is here that scientific community direction plays its most important part. City fathers have realized that the development of a fancy knit goods and silk goods industry in the Charlotte section has not been an accident. These types have located there, instead of staple goods enterprises, because the rising tendency in living costs has necessitated the acquisition of industries with broader profit margins. Other communities, although they may not as yet have reached Charlotte's status, see in the future the inevitability of advancing costs. They recognize the corollary necessity of advancing wage rates and have no inclination to attempt to check this. Consequently they prefer to plan now for the attraction of industries which can be operated economically on such a basis rather than to wait until later developments necessitate migration of industries from their midst to more remote sections, and radical changing of the types of products of those industries which remain. In other words they hope to profit by the experience of New England from which that section is only now emerging.

The net result is that staple goods manufacture is being forced to the rural sections while the larger towns and cities are acquiring the specialty fabric industry with its wider profit margin. This geographical demarkation may be expected to be intensified in the future.

Tendency Toward Mergers

Just as diversification is recognized as a healthy and necessary step in southern progress, so too is the merging of weak units into larger and more effective organizations. It is true that much of this tendency has been on news-print but there have been enough actual developments to indicate a definite trend. Linked with this is the vertical plan of expansion which is finding expression in isolated examples in the South. The next five years should prove to be a particularly interesting period in this connection.



An Example of the Modernization Work Going on Among Southern Textile Mills: Roof of Weave Room at Proximity Mills, Greensboro, N. C., which Originally Had One Long Transverse Monitor

View in Finishing Dept. of New Gardner-Warring Underwear Mill at Florence, Ala. Machinery Was Shipped to This Plant from Amsterdam, N. Y.

Modernization of Equipment

As the South prospers, rising living costs decrease the manufacturing differential between that section and the North. This in turn necessitates closer and closer attention to productive efficiency. As a result, a visitor to southern textile mills in 1927 received as one of his outstanding impressions, a conviction of a new interest in maintenance of plant equipment.

Programs of modernization are under way in all parts of that section and these, coupled with the southerners' native receptivity to new ideas, constitute one of the most hopeful signs of continued expansion and progress in southern textile manufacture.

Adjusting Production

It is not the writer's task to dwell at any length upon the problem of over-production in itself because this is treated adequately in this issue. However it should be pointed out that conversations with executives of southern mills have indicated a new appreciation of the importance of adjusting production to apparent demand. In this, the work of The Cotton-Textile Institute has played an important part, and the reception given by mills in the South to the educational program late in 1927 is an indication of the attitude of that section.

In this sketchy outline of trends in southern textile manufacture, no mention has been made of the growing interest in personnel training and education; of the new appreciation of the importance of sound cost accounting methods, or of other broad tendencies at work in that section. Development there has been so virile that it is difficult to keep pace with all the phases of southern progress. It is particularly important however to emphasize the fact that virility is now coupled with scientific planning. As a result it is probable that the South will avail itself of the advantages accruing from decentralization of manufacture and distribution, with a minimum suffering due to growing pains of rapid expansion.

Business Outlook Favorable

By John E. McLoughlin

President, McLoughlin Textile Corp., Utica, N. Y.

It is very difficult to predict what business will be during 1928,—there are so many things that have a bearing on it, although almost everyone thinks business is going to be good and we will have a good year. Whether that is a hope or whether they have a real basis for the prediction I do not know.

Stocks of goods throughout the country are low and business should be good. Costs are very high, however, and until we have a revision of prices with a reduction along certain lines, it is a question whether people will buy in quantities or not.

Prices in the automobile business have reached a point now where there should be a large distribution of machines, consequently a large turnover of money. This should give employment to a large army of people and should furnish them with the means to make purchases in other lines of merchandise.

Agriculture, on which so much depends, is doing better. The outlook for the farmer is good and he should have money to spend in general trade.

Take it all in all, the outlook is favorable. A good deal is dependent upon Congress. This is a political year and it is likely they are going to play politics to a certain extent; they are doing it now. A good deal is dependent on their action in Washington.

Complete Breakdown of Orthodox Textile Marketing Methods Inevitable

Scientific Approach to Problem of Distribution On Its Way—Outstanding Avenues of Attack

By W. E. Freeland
Of Freeland & Warren, Boston

OUT of the welter that is found in the chaos of the present market for textile manufactures, it is at first sight somewhat difficult to find any common tendencies. It is difficult to pick basic tendencies or trends from the many current surface operations.

Once upon a time—and not so long ago—the processes of making and marketing goods were relatively simple for most textile industries. The trade channels employed were simple. The actual selling was often done by sales agents. The sales were largely to jobbers who, in theory, created or, more accurately, developed the retail outlet. Orders were placed in advance and manufacturers made their products against a measured reservoir of orders. Service stocks were relatively small. Manufacturers' brands were more noticeable by their absence than otherwise, and the thought of manufacturers' brands to protect their market had not seemed of importance.

In a few short years the picture changed. The tasks of creating consumer demand and of carrying service stocks were passed squarely back to the manufacturer. The realization that the jobber was not organized to expand the number of retail outlets grew in the minds of management. The effect of dealer education in stock turn and simplification of lines found expression in the current hand-to-mouth buying. The value of a brand as a prime necessity in more intensive advertising and sales promotion became apparent. Likewise, the value of producing consumer goods became apparent. The lack of forward orders forced the building of service inventories of products.

Over a long period, the cost of marketing had not grown noticeably. The whole tendency was toward what may well be called "extensive marketing," the policy of the textile manufacturer being to get his goods into all the national markets and, as far as possible or profitable, into international markets. The question of geographical location of his markets did not enter very seriously into the cost of marketing inasmuch as most of the costs added by distance or length of time in delivery were assumed and passed on by the jobbers who were then very much the dominating force in the whole field of distribution.

New Period of Competition

When the productive capacity of the textile plants overtook and began sharply to exceed the capacity of the market to absorb, we entered into a new period of competition. Coincident with this was the beginning of what promises to be a steady declining commodity price level and a consequent squeezing of the gross margin of profit for the manufacturer. The type of competition which ensued rapidly produced a rising cost of marketing. The buyer was in the saddle. To many a mill group came a quite new thought: Do we need to be national distributors in order to obtain the volume of business which will enable us to run our plant at a profit?

Accordingly, managers began to turn their attention to the possible value and profit in intensively cultivating a smaller market instead of extensively cultivating a broad market. Out of that thought of the value of intensive marketing has come salvation for many a business.

The Need for Facts

When one begins to think intensively about his business, the need for facts becomes quickly apparent. Someone has well said, "The practical man is he who repeats the mistakes of his forefathers." The future will demand of management that it subject to the test of scientific search those practices and methods which are most widely accepted. The very fact that they are widely accepted is in itself a challenge or else we must agree that management is in a static condition. How can that be possible with the sciences (pure and otherwise) pouring forth their present flood of new facts, new laws, new products to make industrial and economic conditions, ever-changing—fluid not static.

Management will be asked to report to boards and bankers to what extent it is utilizing research to protect the future of a business. It is no longer considered an act of Providence if obsolescence sweeps into the discard a plant or its products, or inefficient equipment or methods force a business into a position where it can operate only in periods of high prices. Just now the pressure upon marginal producers is such that many can be saved in part only by mergers and consolidations. Management is expected to use research to keep ahead of or abreast with competition, or to give the owners ample warning of basic changes.

Repeatedly we hear this statement: That research is so costly that only the big fellows can finance it. Ask any good industrial or chemical engineer in the professional field of their achievements for the little fellows. If it were not for the pall of secrecy which, on account of the confidential relationships keeps these stories from becoming public, it would be clear to everyone that we have amazing resources available for the little businesses. The highest technical skill is no monopoly of big business.

Era of Falling Prices

As has been said, we are in an era of falling commodity prices, with a resulting squeezing of marginal profits. There are clear indications that we are in a long downward swing of prices. Management then will be urged to cut the costs of production, the wastes of materials and energy, and the steadily rising costs of marketing. Only those who succeed will survive. Dynamic, driving, dictatorial management can go only so far in this direction; in the end, it must turn to research.

So we will find management asked to safeguard both goodwill and profit by utilizing the long neglected tool of research. In the field of industrial research, we can see a steadily rising demand for betterment of products, for the seeking out of allied or supplementary products to even out the utilization of plant equipment and furnish continuity of employment of labor. We see, too, a demand for better processing, for the economies of good production control, for better wage systems and incentives, and for the establishment of real standards of quality and performance.

Merely to mention standards is to bring forth the fundamental reason for the increasing interest in commercial research. Management will be asked to measure the success of its marketing against the potential consumption of its various markets rather than against the records of past sales. It will be asked embarrassing questions as to the coordination of advertising and selling efforts. In particular it will be asked to measure the profitableness of marketing activities on the basis of sound ascertained costs and this alone will serve to energize these marketing activities.

Consumer Has the Say

Management is beginning to grasp the fact that over a period of years it is the consumer who says what the manufacturer shall make, what he shall get for it, and at what time and in what condition he shall deliver it. Therefore, importance is being given to setting up the steady flow of ideas from consumer to manufacturer as a safeguard against inbred thinking and its unfortunate corollary of management complacency about current conditions. It is inconceivable that the upward surge of marketing costs can be wholly met by economies of production and lowered unit product costs. It is inevitable that the microscope of research be turned upon this whole subject of marketing and new methods, a new technique, and better control be established. It will be a novel thing for many managements to learn that they must delve into economics, statistics, psychology, and even ethics in order to hold their jobs.

Join almost any conference of managers and note how often the problems of marketing crop up as a chief topic of conversation these days. In most lines of industry, we can produce more than we can sell in our domestic market. Competition is now fiercely aggressive. The fight of the weaker companies for survival is creating chaotic conditions. Yes, marketing is a major problem. The need for a new attitude of management towards marketing is pressing.

Avenues of Approach

How shall we attack it? The avenues of approach are many—but dimly lighted. For the first time the Government is initiating real research of our methods of distribution. The facts coming to light are astonishing those who thought they were well informed. How many of you knew that 17 different kinds of retailers sell hosiery in Baltimore, including bakery, confectionery, grocery and hardware stores? It is plain that the old order passes.

What kind of studies enter into commercial research? Time does not permit us to catalog all the many activities and searches in this field of marketing. Some are outstanding, however. Where we find management assuming a new attitude, we find interesting things going on. We are finding statistical and analytical methods for measuring our markets, whether they are found in geographical or economic groups. Thus, we can spend our marketing appropriation more intelligently. We are asking management to kiss goodbye to that volume of business which can be obtained only by disregarding the cost of getting it.

With our potential market measured, we can so re-align our sales territories as to give better equality of opportunity to our salesmen. We can have a better basis for setting up standards of performance so that we can substitute a task and bonus form of payment for salaries set by hunch or commissions set by traditions. We are beginning to study what is the most profitable frequency of call and to plan salesmen's routes so that the

profitable frequency shall be met but not exceeded.

Evaluation of a Market

The question of the evaluation of a market is of importance as a part of getting that desirable thing, the sales quota. With the evaluation as one of the factors must come others such as the past development of the territory, the past development of the man in the territory, and the budgeted amount of sales or sales promotion effort scheduled for that territory in the period for which the quota is to be set up.

Consumers in geographical or economic groups constitute a market. Today we find at the right hand of management a statistical group engaged in analyzing not only the activities inside a business, but things on the outside, such as market evaluations. In making a market evaluation, it is not enough to know where population is or how many of groups of population pay income taxes. We must attempt to find as closely as possible some measure of the economic status or buying power of these groups of consumers. Even more, we must attempt to analyze buying inclination as well as buying power. In the survey made by the Division of Domestic Commerce of the Department of Commerce of the market for electrical merchandise, there was incorporated a factor of buying inclination. Given the same buying power, the inclination of the people of Maine was put at 70% of normal, and that of the people of California at 140% of normal.

A few years ago the writer was interested in marketing a semi-luxury style product in the field of textiles. We developed a simple factor to disclose inclination to buy a luxury product. We developed another factor to measure interest and education in style. We grouped the wide ranges of percentages of each factor into five class groups, calling the highest group No. 1 and the lowest, No. 5. The national average was the center of group 3. Bar Harbor, Maine, automatically showed up in Class 1 of both factors. Biddeford, Maine, a typical textile city, fell into Class 4 in both factors. When we reached Twin Falls, Idaho, we found another Class 1 city, the only one for hundreds of miles about. We found our salesmen had never called on Twin Falls, but we had a good account there. How did that happen? The class of people he had to serve had compelled the leading local merchant to come to New York and place orders with the company's New York office.

In this same instance, our factors gave a ridiculously low rating for such cities as Dallas and Los Angeles. Evidently research was needed. It became plain that the merchandising ability and instinct of retailers was an element. We found that a factor based on the percentage of retail sales people to total population enabled us to obtain a modifying factor which made these and other cities assume their proper position. At once, for instance, the leakage of trade from New Britain to Hartford, Connecticut, was measurable.

So, too, we are finding the statisticians of tremendous help in our attempt to forecast style, design, and color changes. What one or two of our leading textile manufacturers are doing in this field is now a public story. Others, however, who have been quite successful have not yet chosen to take the public into their confidence and tell them the methods by which they are operating in making their style forecasts.

Intra-Industry Competition

The need for and the gains made by commercial research are finding new emphasis in the activities of various large textile companies. There is beginning to be a realization that it does not suffice to study competition within an industry; that there also must be a study made of the competition between industries for the consumer's dollar. The automobile, the radio, the modern household utilities of one kind or another are competing for the free dollars of the consumer, possibly to the very real detriment of textile sales. We are beginning to realize there are economic forces and trends lying outside of the industry which are having a vital effect upon the textile industry. It is interesting to learn that one large textile manufacturer is carrying on a definite study as to the real place of the wholesaler in the field of textile distribution. The motive is not to prove that the wholesaler is not needed, but to find out how he can be utilized in the chain of distribution with the great growth going on of group buying and the other developments of mass distribution.

As the textile manufacturer watches the development of manufacturers in other lines in the establishment of chains of retail outlets under their own ownership, it is no wonder that he casts longing eyes in that direction. Again, as he surveys the orthodox and accepted channels for the marketing of textiles, there obtrudes itself a view of the Gotham hosiery being distributed successfully through 14,000 outlets without the company's having salesmen on the road. Of sheer necessity there is wide questioning as to what is the right method of distribution in the textile field and what types of trade outlets can be most serviceable, especially in view of cutting down the cost of marketing and amplifying the service extended to the consumer.

Separate Merchandising Function

As functional management has been long accepted and steadily making progress in the field of production, one can readily see why it is also making progress in the field of marketing. Of course we have had our advertising and sales promotion departments for some time. One of the new things to be studied is the rise of the merchandising function as distinct and separate from the selling function. Formerly the job of making sure that a manufacturer had the right product at the right price at the right time floated back and forth on a sea of uncertainty between sales and production. Now one finds that a merchandising organization is beginning to appear, which has much to say about the standards of products, about determination of prices, and usually has full control of the finished goods inventories and therefore the job of placing the requisitions for products upon the mills. The isolation of this function as a main part of the organization has been of very great benefit in some businesses.

What Constitutes a Sale

Probably one of the great needs for a new attitude of management is toward a realization of what constitutes a sale. In the old days the steps of a sale were, order from distributor, invoice to him, check from him. Now management must recognize that this sequence does not complete a sale. No sale is complete until the goods pass out of trade into consumption. It is the retail clerk who makes the real sale. We are beginning to ask management what it is contributing toward the real sale. More than that, we are beginning to ask management what it is doing to keep the product sold, to maintain satisfaction after the consumer or user has it in his possession. One of the elements that helps to reduce a marketing cost is repeat sales due to established good will.

The manufacturer of textiles of a kind which cannot go directly to the consumer is in a more helpless position. If he is manufacturing grey goods for further conversion, then his research must be almost wholly in the fields of production and purchasing because he is going to sell in what is a price competitive field. If his product is a kind that goes largely to the cutting-up trade, then his particular research will probably find its greatest emphasis in the field of styling so that he may to some degree be removed from pure price competition. The day will unquestionably come when real cooperation will arise between the textile manufacturer and the cutter-up to the end that the manufacturer's brand and reputation may carry through to the consumer with the goods. If this does not happen, one may confidently look forward to more consolidations and mergers in the textile field and a further integration so that the textile manufacturer will become his own cutter-up in order that he may carry through the kind of service to customers which insures business life and profits. There are a few textile manufacturers who are already so far in advance in the field of styling that they are beginning to dictate to some degree to the cutter-up in regard to his methods and operations so far as they concern the use of this manufacturer's product.

Advertising and Promotion

In the fields of advertising and sales promotion, we are beginning to see several apparently basic changes. The emphasis is moving from the old type of general or trade paper advertising toward more localized efforts and more money is being spent every year on point-of-sales marketing helps, and upon such matters as training of retail clerks, and in a good many cases training of the manufacturer's own salesmen so that they can be truly helpful to the merchant instead of being merely order takers.

In the final analysis, we are almost certain to see a breakdown, and a rather complete breakdown, of all the old orthodox, accepted methods of marketing textile goods. One has but to study the better known and larger textile selling houses to see how rapidly the change is taking place. It is inevitable that those responsible for marketing will borrow from the field of management those things which have been found productive of good in the field of manufacturing. The marketing manager will be operating with budgets based upon forecasts and will be asked to establish such control over his sales staff and their operations that the forecasts can be made to come true. Whenever this step is undertaken, it becomes essential that plans and schedules appear in marketing just as they do in production. We shall see the advent of better standards, of standard tasks, and of performance records measured against the standard tasks. There will be a growth of better supervision, particularly better supervision in the field. There will be more intensive training of the people in the sales organization and a larger use of incentives.

One of the changes which nearly always occurs as marketing management becomes more truly scientific is a change of emphasis from study of the achievement of the salesman, or of his performance as against former records, to a very close analysis of customers and the building up of adequate customer records. In other lines of industry it has become quite well known that if you spend $250 or $500, or possibly $1,000 to get a new customer, it certainly will pay to spend about $10 a year keeping track of that new customer and trying to obtain a larger percentage of his purchases in your line.

To the outside observer, the textile field is peculiarly marked by the absence of standards and plans, the inadequacy of management control, and the failure to maintain continuous research and records which are filled with live facts and used for the benefit of the manufacturers before those facts become frozen into statistics. There is a lot of tradition in the textile business that will have to be thrown overboard before the regular type of textile managers will recognize clerical labor and research workers as direct producers. This is all the more true because up to this stage it can be safely said that the men responsible for textile profits have not learned to use the tools of modern management, but those who come much in contact with the textile manufacturing business realize that down underneath in many mill organizations are groups of young men who are destined soon to change utterly the current situation in regard to the adoption into mill management of anything good which may be found anywhere in the field of management.

Textile Merchandising: Changes Noted During Recent Years and Probable Future Trend

A Broad Survey of the Economic Upheaval Which Is Forcing Manufacturers Into New Lines of Thought

By Louis Bader
Of New York University

MORE than 250 years ago that great English philosopher and educator, John Locke, observed that we learn altogether through experience, by doing things. As we look back over the last five years at the welter of things attempted in the effort to market a textile production apparently in excess of what the consumer desired, we are reminded of Locke's words, and we wonder what has been learned.

It is to be regretted that so much apparently must be learned by experience, inasmuch as the experiences of the textile trades during the last five years are not altogether new; others have gone through similar episodes before and recorded their experiences. One great business lesson of the past, which we ought to have learned from books since it has been experienced and written about so often, is that production of more goods than the consumer desires means low prices, and if the supply must be sold such low prices usually mean little if any profit.

Recorded business experiences of the past have given rise to a number of similar generalizations, which are more or less applicable at any given time. But when we face a period of transition like that of the last six or seven years, following as it did that longer period of rapidly growing business and rising prices, when business men could be successful in spite of a lack of fundamentals, perhaps we ought not to be surprised that many hardly knew what to do and still wonder what is the best step to take.

During the last five years a number of changes have taken place in the merchandising and styling of textiles, the import of which is hardly yet fully realized. When their full possibilities are grasped we may expect steps to be taken in widespread fashion to utilize them to the full. At the beginning of this period two fundamental changes took place, the tremendous significance of which nearly all of us were slow to realize: (1) Hand-to-mouth buying by the middlemen who serve the consumer, and, (2) a change in general well-being which made possible a more generous use of higher quality clothing and house-furnishings. Together these have made necessary rather drastic changes in styling and merchandising of textiles.

The Background

To understand properly these changes which have shaken the textile industries to their very foundations it is necessary briefly to review the period immediately preceding the World War. At that time staples were in great demand, style goods were the exception, and very little sense of style, consumer or producer wise, had been developed. We depended almost altogether on European designers for new styles and we followed what had gone before making a few simple variations for the bulk of textile production.

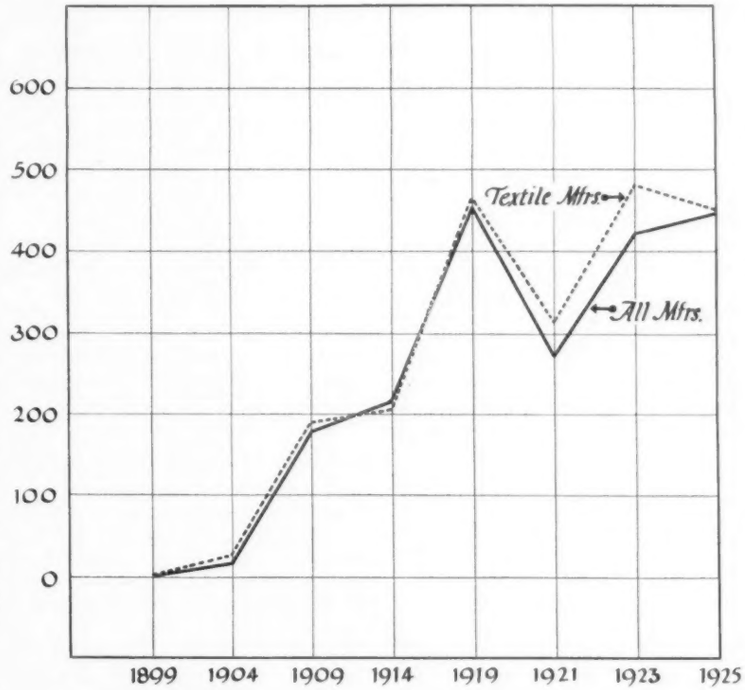


CHART A

Showing % Increase of Dollar Value of All Manufacturers and All Textile Manufactures, for Census Years 1899-1925, 1899 Being the Base Year

The explanation for this condition was to be found then as now in the underlying economic conditions. Prior to 1900 a great many people in this country did not always have all the clothes and house-furnishings they could use. Following the 90's came a period of rapidly increasing wealth and improving standards of living. This meant, for many people, the opportunity to buy a proper supply of clothing and house-furnishings. They were not interested at first in style so much as in securing all they needed of the various commodities. This made possible the production and easy sale of large quantities of staples with a small call for style goods from that outer fringe who had fairly large incomes.

There was no merchandising problem in the sense that we know it today. The merchandising problem was largely one of overcoming the physical difficulties incident to creating time and place utilities. How naively the whole process of marketing was regarded may be illustrated by the following: Before the war the author was engaged in the sale of khaki and cotton worsteds. One day he was accosted on the street by a young man with a sample case. The young man asked, "Aren't you selling khakis for ———?" "Yes," was the reply. Then he continued, "I'm selling khakis for the first time. My employers gave me this case of samples and told me to go out and find customers, can't you give me a few leads." Some few years earlier the author had started selling in almost the identical manner.

Another young man comes to mind who had a similar job selling other types of cotton fabrics. This second young man combined with other qualities those that go to make up a good market research man. He ferreted out many customers who could use his products, and finally with these lists as his stock in trade he became a sales agent for some mills.

The author was also in a position to observe the styling operations of a mill making low priced fabrics for men's and women's wear. For years the styles for each season were evolved, (1) from old sample books of previous styles produced, (2) style samples from one of the Paris style firms, and, (3) watching the style trend of high priced fabrics. This caused the making of hundreds of styles each year with only occasionally a really successful number, and then generally only when the mill supervised its own selling operations. With the so-called style numbers went a group of staple patterns and subdued colors on which the bulk of business was done. These incidents were characteristic of the selling and styling operations among important factors in the cotton and woolen trades before the World War.

The War Period

No changes in styling or merchandising methods were made during the war period because the need did not exist. Great emphasis was laid on producing only the essentials. And the demand for these essentials was so great that our productive capacity, already greatly increased due to the wide extension of industrialism in the South and West, was materially added to. Then for two years following the war the great speculative demand for goods, because of the belief that shelves were bare of necessities, made it still unnecessary to make changes.

The Silk Impetus

During the period when necessities in clothing meant, for the bulk of consumers, cotton and cheap woolen fabrics frequently made up at home, silk was used by the rich and was popularly associated with nobility. The best that might be hoped for was a black silk dress by the time a woman became a grandma. The ready-to-wear industry was founded then and grew to full stature. By 1915 labor costs had become so high in this industry that it became possible to produce silk garments at prices in line with the bulk of consumer incomes. Since 1922 a radical change in dress styles has accentuated this favorable ratio of silk clothing prices to incomes; the straight line figure and short skirts and sleeves in dresses have made possible the production of silk dresses to sell at prices very little, if any, higher than woolen or good cotton dresses.

The almost universal elimination of cotton for underwear and the relegation of cotton dresses to the kitchen had a serious effect on the cotton industry. This change, almost overnight five years ago, to silk for

women's wear for summer and winter clothes also affected the woolen industry. As a necessary corollary to the adoption of silk dresses and underclothing for winter wear, heavy coats became necessary, and this demand could seemingly only be satisfied by fur coats. This use of silk and fur affected the woolen industry perhaps more than the cotton industry. The cotton industry had a back-log, which still remains with it, in that its cheapness makes its use possible and necessary in those industries which require a substantial yardage of cloth, and for those household uses, bed and table linen, towels, draperies, upholsteries, house dresses, aprons, etc., for which neither silks nor woolens are desirable.

TABLE I

Dollar Values of Manufactured Products, Census Years 1899–1925.*
000 Omitted

Year	All Manufactured Products	All Textile Manufactures	Cotton	Wool	Silk	Knit Goods	Furs
1899	11,406,927	1,646,734	332,806	296,990	107,256	95,834	25,000
1909	20,672,052	3,086,944	615,218	507,167	196,912	200,144	56,000
1914	24,246,435	3,447,997	676,569	464,250	254,011	258,913	45,000
1919	62,418,079	9,216,103	2,152,272	1,234,657	688,470	713,140	175,000
1921	43,427,000	6,957,000	1,278,221	888,558	583,419	634,074	140,000
1923	60,258,000	9,463,000	1,901,126	1,312,719	761,322	848,177	200,000
1925	62,706,000	9,123,000	1,714,368	1,199,000	808,979	809,960	254,000

*From reports of the Bureau of Census.

Style Changes Demanded

The period 1921-1926 was one of considerable improvement in the economic status of the bulk of consumers. Real wages have had for the first time a considerable advance, making possible the widespread use of the radio, the automobile, and attendance at excellent moving picture theatres, resulting in rapid knowledge, throughout the country, of style changes. This improved economic condition has enabled the consumer to demand style changes in clothes, draperies, and upholstery. Since the seasonal element is a factor in this country, these changes could be rapid and because of this and competition, changes in style have been rapid.

Indications are that this improvement in economic conditions will continue, possibly for so long a period as the next five years, and therefore we can expect the consumer to continue to smile on rapid style changes and the use of silk and its half sister rayon, because these fabrics give the greatest satisfaction in appearance, wear, laundering, and that feeling of prestige which had heretofore been associated with the nobility and the rich.

The trend to silk may have been initiated by the French couturier through fiat, but it did not take much urging and it is continued because of improvement in the underlying economic conditions of the bulk of consumers. We may question who establishes styles other than the consumer. But we have all had the experience of producing hundreds of styles and that out of the welter of thousands of styles evolved by the various producers of fabrics in one season, we find that the consumer exercises his royal prerogatives and chooses one or two which sell like wild fire and the rest are just that much waste. Perhaps instead of evolving fictions of our own brain, we may find a way of cooperating with the consumer to produce just what he would like to have and so avoid the waste.

Every indication points to a continuance along the line of much variety. This is emphasized by the recent experiences of the hosiery industry and the style development in the automobile industry. Supporting evidence is found in the recent study of the Home Economics Bureau of the Department of Agriculture, which showed the tremendous change from cotton to silk and rayon garments in five years, as well as by the study of the National Retail Dry Goods Association showing the sales of cotton, silk, and rayon undergarments during 1926 and the increase of sales expected for 1927. Cotton garments are rapidly becoming a poor third.

Given the economic conditions which permit of the necessary expenditures by the consumer, the why of this tendency may be gleaned from a survey conducted by the Corning Glass Works with respect to so prosaic a thing as a cooking utensil, their product "Pyrex." In this survey 3,448 housewives were interviewed as to why they purchased "Pyrex," a glass cooking utensil much more expensive than other cooking utensils of the same type. They answered as follows: (1) better baking qualities, 61%; (2) ease of keeping clean, 41%; (3) usable for both baking and serving, 33%; (4) attractiveness, 29%; and (5) durability, 7%.

This may not be anything more than interesting as gauging the attitude of women toward the various clothing fibers. But to the author there seems to be something fundamental to the textile industry about the survey. For example the principal quality of cotton and woolen fabrics has been commonly regarded as durability. For attractiveness, style, slender body effects, ease of cleaning and packing, silk and rayon give better results than the other fibers. With this revelation of the feminine attitude toward cooking utensils, may we not assume that these factors are going to influence women to continue in favoring silk and rayon for all sorts of clothes?

Textile Share of Consumer's Dollar

All of this perhaps gives us a clue to the merchandising policies which may of necessity be followed by the textile industries during the next five years. To understand more clearly this merchandising trend it is advisable to have some interesting statistics before us. To what extent have the textile industries been losing ground to other industries in the fight for the consumer's dollar? The author had been inclined to think a tremendous loss had taken place. What with the automobile, the radio, widespread use of kitchen machinery, more amusement and higher education, and the wide extension of installment selling, surely the textile trades have suffered very materially because a much smaller part of the consumer's income is now being spent for textiles.

This does not, however, seem to be the case especially when we consider the following tables: Table I shows the dollar values of all manufactured products and the dollar values of cotton, wool, silk, knit goods, and fur manufactures for the census years 1899 to 1925. Table II shows the per cent increase in values of products, wages paid, cost of materials, and number of wage earners for all manufactures and all textile manufactures. Table III shows the per cent of increase in value of cotton, wool, silk, knit goods, and fur manufactures for the same period.

Charts "A" and "B" are a graphic presentation of these various figures and indicate, (1) that textiles have been holding their own in increasing values; (2) that the principal trouble with the textile industries is internal competition for that portion of the consumer's dollar spent for clothing and house-furnishings; and, (3) that, as previous studies have shown, the various textile industries are equipped to produce far in excess of consumer desires. And no account has been taken here of rayon production which has increased tremendously during the last five years. Preparations are underway to materially increase this production and of course this cuts in on the sales of the other fibers. The United States production and imports of rayon probably account for the equivalent of 500,000,000 yards of cloth.

One of the more recent studies of family budgets, that of the U. S. Department of Labor for 1918-1919, suggests that consumers earning $2,500 and less, spend on the average from 15% to 25% of their incomes for textile products. The studies of Professor Wilford I. King of incomes in the higher brackets, indicates that less than these percentages is spent for these commodities as incomes increase. In its pamphlet, "Population's Purchasing Power," the Chamber of Commerce of the United States indicates that for 1923 the expenditures for clothing and house-furnishings took

TABLE II

Per Cent Increase Various Factors of Manufactures, Census Years 1899–1925
1899 used as base year.

Year	Value of Products All Mf's	Value of Products All Tex.	Cost of Materials All Mf's	Cost of Materials All Tex.	Wages Paid All Mf's	Wages Paid All Tex.	Number of Wage Earners All Mf's	Number of Wage Earners All Tex.
1904	29	31	29	39	30	23	16	13
1909	81	87	84	94	70	73	40	40
1914	112	109	118	122	103	96	50	46
1919	447	459	468	493	424	330	93	56
1921	280	322	282	319	308	328	47	46
1923	428	474	425	494	447	407	86	66
1925	450	453	446	486	434	380	78	58

Based on the reports of the Bureau of Census.
Furs not included in textile manufactures.

While the textile industries more than held their own in value of product manufactured, and should have been no worse off than other industries, a large part of this increase was due to a rapid advance in the cost of materials used and very largely at the expense of wages and profits.

between 25% and 30% of incomes in selected cities. The Commercial Survey of the Philadelphia Marketing Area conducted by the Department of Commerce indicates that about 25% of retail expenditures is for clothing and house-furnishings.

We may say then there is indication that not more than 25% of consumer incomes is spent for textile products in this country. And since this is a liberal share of income, we can hardly expect the consumer to add appreciably to purchases in this field. It is worth noting here that the major part of any increase in consumer incomes as the result of the wide extension of credit (installment buying) has been used in the purchase of new products, some of which have tended to make him more efficient as a producer, thus enabling the consumer to add sufficiently to his income to continue the purchase of textiles in the same ratio as before.

Stating the Problem

To state the problem is half the solution. The problem as the author sees it is as follows:

(1) Until six or seven years ago the textile industries grew rapidly and without growing pains due to the growth of the country.

(2) The need for necessities was so great that those industries supplying such need had comparatively simple style and merchandising problems.

(3) Since the textile industries supply one of our essential needs, a certain expenditure of the consumer's income can be depended upon.

(4) The consumer's income has increased sufficiently to permit of an increased consumption of stylish and higher quality fabrics.

(5) This higher standard of living is likely to continue during the next five years.

(6) The textile industries have been securing their share of the consumer's dollar in the same ratio as manufacturers as a whole.

(7) The competition for the consumer's dollar is largely within the textile industry itself, with conditions favoring those divisions of the industry which cater to the higher tastes and luxuries of the consumer.

Policies Necessitated

If this statement of the problem is accepted, we can be sure that in a broad way certain policies ought to be adopted and thoroughly tried out. We can expect to see, during the next five years, those principles of good management so successfully applied to production by the late Frederick W. Taylor, more generally applied to marketing, and in the textile trades particularly. This application will probably take the form of:

(1) A wider and better use of those two tools of successful modern business, scientific market management and advertising.

(2) The use of market research and analysis so that producers may know just where their markets are, the kinds of goods wanted by consumers, and be given a fairly good idea of the quantities of each particular product wanted.

(3) A better understanding of those economic laws applicable to the sale and purchase of commodities as worked out by the masters of economic science after much observation. The failure to understand and follow a few of these simple laws has been the cause of some of the ills in these industries.

(4) The application of principles to the marketing function similar to the application made in production; that is, the specialization of tasks, expert study of how to perform those tasks, and the necessary training to carry them out in the best possible manner.

(5) Cooperation in the industry, in each branch and between the branches, to effect coordination of supply with demand, and following more closely business changes as forecast.

(6) Better individual and some cooperative development of the style factor, so that (a) each individual firm will develop, with least waste, styles which can reasonably be hoped will be accepted by the consumer in sufficient volume, and, (b) that piracy of styles may be reduced to a minimum, preserving for each firm the first fruit of its style effort.

What Has Been Done

The leading manufacturers in the silk industry have for a long time directly controlled the sales policies and practices used in the sale of their product. This has meant creating their own sales organizations, recruiting and training a sales force and the supervising of that sales organization through the application of sales management; careful selection of distribution channels which have been changed as occasion required; the use of advertising on a larger scale than most other divisions of the textile industries, and keen interest in the development of style distinctly American in conception.

The cotton and woolen industries have maintained the most round-about marketing methods and these are no longer proving effective. Recently the cotton industry has begun to make some changes, and we find now:

(1) A greater degree of specialization by converters.

(2) As mills become strong enough financially, there is a tendency to cast off the leading strings of the commission houses and sell direct to their customers.

(3) Commission house control of mills by actual ownership. While there has been more or less of this for a long period, the past five years have witnessed a definite trend in this direction.

(4) The adoption of the functional form of market management and an agency arrangement with the middleman.

(5) A tendency among mills and commission houses to sell sheets, pillow cases, towels, and blankets direct to large retail outlets.

(6) A more liberal use of advertising.

(7) Greater integration and combination in the industry.

The woolen industry has so far been most backward in the adoption of modern methods, but as there is a great stirring in this industry, possibly because its hardships have been greater, we may yet see some very worthwhile cooperative action—perhaps the formation of an institute like The Cotton-Textile Institute and a large measure of cooperative advertising.

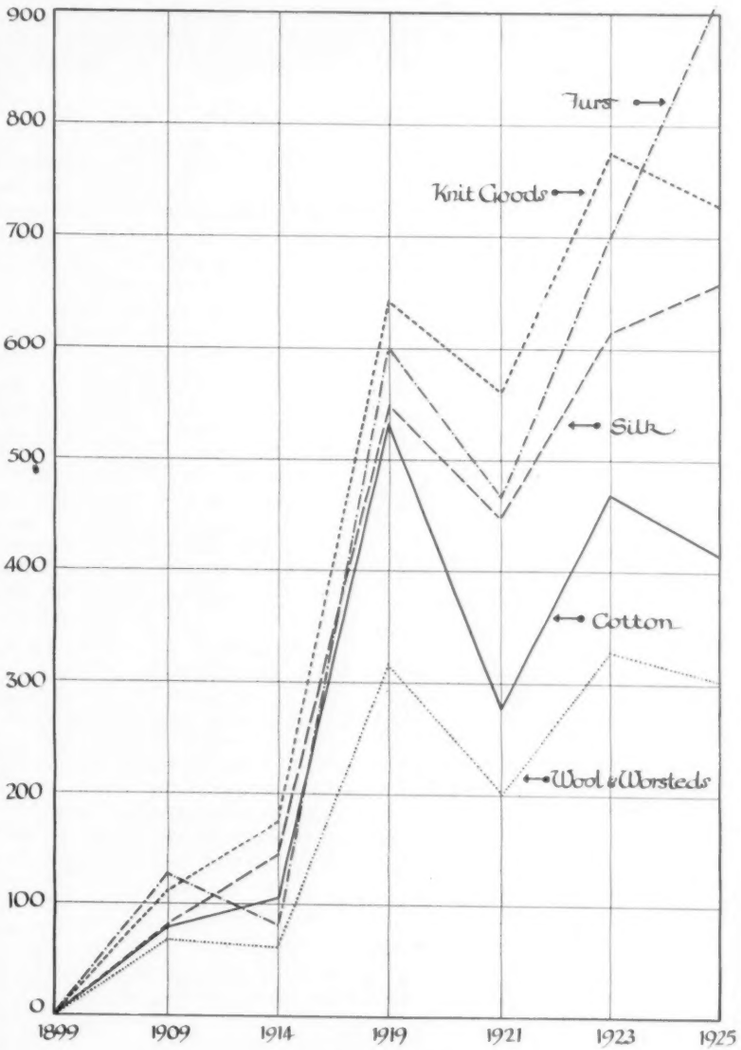


CHART B

Showing % Increase of Dollar Value of Various Textile Manufactures for Census Years 1899-1925, 1899 Being the Base Year

Probable Trends

Perhaps the most important advance in merchandising during the next five years will take place along two paths. The first of these will be in the field of cooperative action by each textile industry, and perhaps as a whole, to discover new uses for some of the products; to widen present uses by securing a larger per capita consumption; and, to properly conduct market research and analysis that supply may be fitted to demand. This proper study of the market is of extreme importance, not only that there may be produced what is wanted and in the proper quantities, but because this in turn means a long step forward in regulating or eliminating the business cycle.

As a matter of fact, inflation, making possible a vision of profit and thus generating a highly optimistic spirit, tends to induce speeding up in production of manufactures. This leads to an excess of commodities in some lines. The excess of stocks and a realization that possibly at the high point prices have reached the supply may not all be consumed quickly enough, generate in turn the downslide. If we could have market research on a large scale and prompt adjustment to the findings the business cycle might be eliminated, and with it would come the possibility of fair profits for the reasonably efficient firms.

We may also witness consolidations, some vertical, some horizontal, and some making possible a variety of product, including the three principal

fibers, so that units will be large enough to undertake that advertising and research so necessary to find out quickly the best possibilities for the sale of its fabrics; to secure consumer acceptance of its cloths, and to work closely with middlemen on an agency basis if possible.

The middleman controls markets and can at the right moment enter upon the manufacture of the products he sells and so eliminate the manufacturer who has been supplying him. This would be a logical development and nothing is so sure in our economic life as change. Just as there was change from primitive production to the handicraft system, then to the domestic system, and then to the factory system very largely because of an increasing accumulation of capital, so because of continued increasing capital on a scale never before dreamed of, the integrative process is becoming the outstanding factor.

This integration may take the form finally of (1) either all manufacturers controlling backward to the raw materials and forward to the consumer, or, (2) the retailer going back beyond the middleman structure and controlling the productive end. We now have a number of manufacturing wholesalers who once were purely wholesalers. We have some retailers going back of the middleman structure to purchase direct from the manufacturer, and we have some retailers of clothing who now control the manufacture of what they sell and some manufacturers of clothing who control the marketing process right through to the consumer.

Advertising

The second path to be followed will be that involving a more extensive use of advertising. The use of advertising by the textile trades is on the increase and should increase materially during the next five years, even though some economists regard advertising as waste. While there is said to be much waste in the marketing process, nevertheless there is open to the business man salesmanship only, either through personal call or by the written word, for the disposal of his product. These are but tools for carrying on business and are not the causes of waste, but the co-results with it of the forces that seethe and surge beneath our present competitive system. Those who would eliminate advertising sometimes forget that of the two personal salesmanship involves the largest expenditure of time and money and probably is responsible for the larger part of what waste there is.

Large scale education of the consumer is the true purpose of advertising and the business man has not yet found a cheaper tool for accomplishing this. Since the consumer as a buyer is being educated science-wise, buying is done more carefully by many people. A recognition of this is found in the mail-order catalogs of some concerns which present an analysis of some of the fabrics they sell. A recognition of this by the textile industries will disclose an increasing need for advertising.

TABLE III

Per Cent Increase in Dollar Values of Various Textile Manufactures Census Years 1899–1925.[1] 1899 Used as the Base Year.

Year	Cotton	Silk	Wool	Knit Goods	Manf'd Furs[2]	Rayon[3]
1909.....	84	84	70	108	124	
1914.....	103	137	56	169	80	
1919.....	538	543	315	640	600	
1921.....	282	444	200	560	460	
1923.....	470	611	342	780	700	
1925.....	414	656	303	743	916	

[1] Based on figures of the Bureau of Census.

[2] Exclusive of fur felts for hats.

[3] Rayon growth is not given because of its comparatively recent production. Because of this its phenomenal growth is known to practically everyone in the industry, and its percentage of increase would run into the thousands.

A review of advertising expenditures during the last five years as shown by Table IV indicates an increasing realization of the value of this selling tool, but in comparison with the size of the industry it is pitifully small expenditure. During 1925 the total value of the production of textile manufactures was in excess of nine billion dollars. Textile advertising expenditure for 1925 in 32 leading publications was less than seven and one-half million dollars, about one-twelfth of one per cent.—a ridiculously small expenditure in view of the keen inter- and intra-industry competition characteristic of business in this country today. The toilet goods industry is reported to have spent nearly eleven millions of dollars for advertising in these same publications during 1925.

The textile industries might benefit greatly during the next five years by telling the consumer, direct by mail or by advertising, something worth while knowing about the various products and so securing consumer acceptance because of that information. For example the consumer might be told of tests made with blankets showing a greater heat insulating value in cotton than in wool, when the blanket is made right. Or again give some information as to the wearing qualities of sheets and pillow-cases in various constructions, or of the excellent wearing qualities of a well-made wool coat against fur, or of cotton versus silk. Or again there might be a combined cooperative campaign to secure a larger business for the yardage department of retail stores and in this way secure a larger sale of the various fabrics, or one to secure greater harmony of furnishings in the household, with a change now and then for the psychological effect. Then again, what does the consumer know about the healthful effects of the various fibres?

There seems to be no end to what the producer might do, and preferably direct to the consumer. So far the textile industries have depended upon the retailer to advertise price and his own store to the consumer, not the manufacturer or his article. The future life of the textile industries is in the hands of the present owners and it would seem to demand that some way of reaching the consumer be found.

What is the good of all our study to find the solution to commercial problems? Apparently the thought behind all business action is profit. In so far as profit is essential, under our present economic regime, to properly stimulate man to lend himself to supreme effort to produce and distribute commodities that man might have greater physical comfort than ever, this is splendid. But ought we not to strike another note, a note somewhat akin to the motives of the scientist in the field of research in pure science, that we look for the solution of these problems because the solution is vitally necessary to that greater growth of our industries so that further progress of the human race may be made into those realms of which only the seers now dream.

TABLE IV

Advertising Expenditures Based on Thirty-two Leading Publications, Weeklies and Monthlies, as Compiled by Curtis Publishing Company.

Textile Fabrics

Year	Total	Silk, Cotton, Linen & Woolen Fabrics, Laces	Sheets, Pillow Cases, Spreads	Towels
1926.....	$1,185,892	$336,074	$326,972	$235,157
1925.....	1,364,348	553,826	288,403	216,630
1924.....	1,213,643	498,187	220,201	158,569
1923.....	1,145,471	538,788	180,519	105,211
1922.....	1,027,306	515,536	107,051	134,892
1917.....	359,819			

Wearing Apparel

Year	Total	Men's Ready-to-Wear	Women's Ready-to-Wear	Underwear
1926.....	$5,346,453	$818,195	$787,323	$773,024
1925.....	5,964,119	895,718	1,199,714	790,481
1924.....	5,903,133	908,835	1,159,643	964,114
1923.....	5,860,173	902,135	1,184,210	1,181,562
1922.....	5,242,504	978,428	1,244,280	859,617
1917.....	3,678,050*			

* Includes shoe advertising.

Toilet Goods

1926.....	$13,511,235
1925.....	10,733,739
1924.....	9,662,001
1923.....	8,276,487
1922.....	6,920,430
1917.....	2,943,719

Sees Cotton Goods Consciousness Developing

By M. J. Warner

President, Converters Association

There is a rapidly developing cotton goods consciousness on the part of the consuming public, which I believe applies particularly to what are known as novelty fabrics, and that in the coming summer season dresses made of the better grades of cotton goods will be prominently shown in the wardrobe of the better dressed woman.

Most likely, the new style of garment being featured will contribute much towards bringing that about. That in itself, even though realized, would not be sufficient to change the condition of the mills from their present situation to one of unbounded prosperity, but in another direction, something far more important can be looked to:

For the last two years, climatic conditions have been very much against cotton goods demand at that season of the year when volume business was looked for. It is not reasonable to conclude that an unseasonable spring has become an established fact; that it will be repeated in this year. If the contrary should prove to be the case, then the sale of yardage over the retail counter will be materially stimulated.

Operations Should Measure Up to 1927

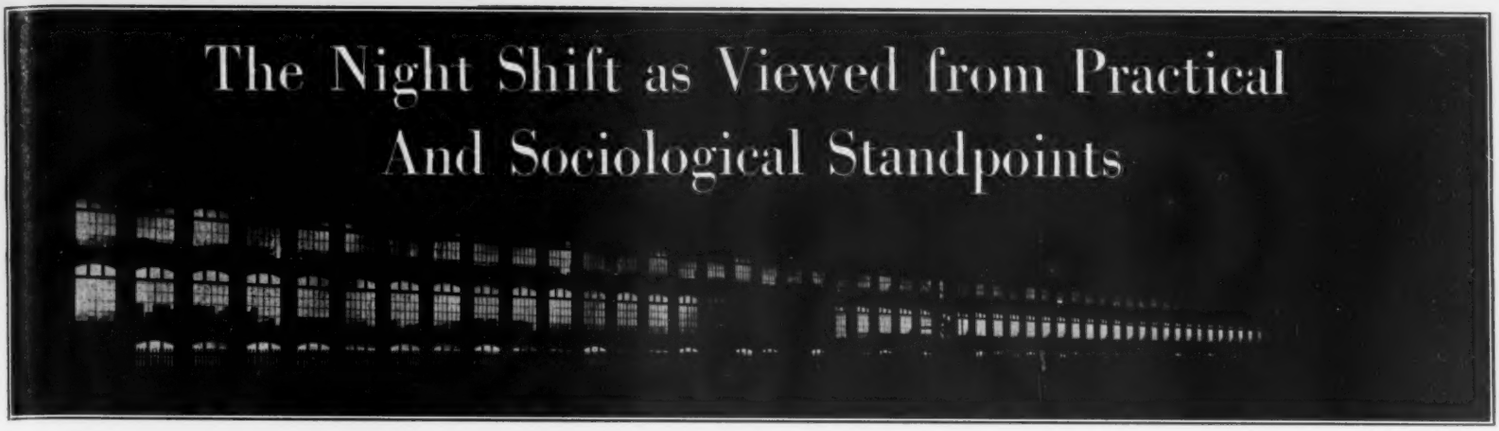
By W. C. Bradley

President, Eagle & Phenix Mills, Columbus, Ga.

We see nothing unusual in the present business outlook for 1928, as compared to the previous year, and we see no good reason why the result of our operations should not measure well up to 1927.

We do not believe that labor conditions within this territory will allow any substantial increase in the acreage planted in cotton and other crops, but would not be surprised to see an increase of 10 to 25% in the use of commercial fertilizers as compared to last year.

The Night Shift as Viewed from Practical And Sociological Standpoints



Its Control Must Precede the Effective Stabilization of Production—Not Sectional Issue

Introduction by Charles H. Clark

POSTED where all may read in the rooms of the Board of Trade of one of our hustling and cosmopolitan mid-western cities is the following notice:

"Discussion on the floor of racial, religious and political questions is expressly prohibited by the By-Laws of this organization."

There is no record as to whether or not strict observance of the letter of this by-law is responsible for any part of the rapid growth of this city, but that it tends to conserve amicable relations between its members there can be no question.

Textile manufacturers' associations need no by-law or placards to prevent their members from engaging in the open discussion of such acrimonious subjects, for the latter suffer from too many intimate industrial troubles to have time for the discussion of outside issues, no matter how vital the latter may be.

There are, however, certain subjects that an unwritten law has always made taboo for public discussion and publication by textile manufacturers, particularly anything having to do directly or indirectly with wage rates. Not because any under-handed or unethical practices were involved, but to avoid public misunderstanding that might result from the maliciously distorted interpretations of labor union leaders and so-called social reformers. Not so many years ago when the textile unions were stronger, and the I. W. W. and other radicals were hungrily awaiting opportunities to make trouble and money, practically all labor matters were proscribed subjects of publicity.

Frankly, the state of mind thus developed throughout the industry, and reflected by the industry's Press, has stifled the open discussion of certain problems that only indirectly affect wage rates, and has handicapped and delayed their solution. Most important of these problems are the length of working days and the operation of mills at night. It was not so much fear of labor-leader and social-reformer agitation that has stifled open discussion of these subjects, nor fear of providing tinder for the political demagogue, but a recognition by leading men of the industry that discussion without means of converting majority opinion into effective remedial action would merely provide a lot of half-baked ideas for the dissemination of labor and political demagogues and other radicals and precipitate a situation far worse than that which now exists.

* * *

BUT the cotton branch of the textile industry now has a "means of converting majority opinion into effective remedial action" in the Cotton-Textile Institute, and the leaders of that organization are well aware that one of their major problems, and one that must be solved before there can be a normal stabilization of production, is the developing of some legal method of controlling a productive capacity on staple yarns and cloths that is dangerously in excess of normal consuming capacity of the domestic and available foreign markets. Furthermore, these leaders are conscious of the fact that the unrestricted night operation of plants, that is possible in most of the cotton manufacturing states, is the most menacing factor of excess productive capacity.

Ever since organization of the Cotton-Textile Institute was perfected the question of needed control of night work has been discussed with increased openness and frankness by far-sighted manufacturers. Such discussion was also stimulated by the record-breaking production that was started late in 1926 by low cotton prices, and that experienced members of the industry realized could not be continued for long without precipitating a slump in demand for and prices of manufactures.

It was in anticipation of such a result, and with the hope of awakening the industry to prevent it or prepare for it, that TEXTILE WORLD a year ago started the publication of its "Cotton Industry Activity Index," and thereafter published frequent warnings of the need of production curtailment to forestall the slump in business that finally developed last fall and that has continued since then despite drastic, but delayed curtailment.

In May of last year President Hines of the Cotton-Textile Institute, and President Harris of the American Cotton Manufacturer's Association, went on record at the joint convention of the latter Association and the National Association of Cotton Manufacturers at Atlantic City, with emphatic warnings of the certain results that must follow the then uncontrolled and abnormal production. Since then the Cotton-Textile Institute has demonstrated its ability, through a simple presentation of statistical facts and their analysis and interpretation, to secure the cooperation of its members in a program of curtailment, and this demonstration encourages the hope that the industry will be so well sold on the benefits of cooperative effort as to be willing to go the legal limit in developing methods that may be relied upon to effect as closely as possible a stabilization of normal production to normal consumption of the major classes of cotton products.

It also encourages TEXTILE WORLD to anticipate such an accomplishment by presenting certain facts regarding night operation of cotton mills that apparently are not generally understood, and that it is hoped may awaken manufacturers to the knowledge that the operation of a night shift is not the certain method of permanently spreading overhead and cutting operating costs that it is commonly credited to be.

* * *

BELIEVING that the humanitarian and hygienic problems involved in the working of women, minors and men nights have been adequately covered by other writers, whose works are easily available to all who care to read them, we are confining our analysis of the subject, first, to a consideration of its dollars-and-cents aspect, and, second to an analysis of the laws of our states and foreign manufacturing countries covering working hours, both day and night.

Ralph E. Loper, who contributes an article headed "Night Operation is Only Temporarily Profitable For Cotton Mills," is a specialist in textile cost accounting of long experience, whose cost methods have been adopted by cotton mills representing fully 20% of the country's spindleage, the majority being located in the South. He presents the facts as he has found them in a completely unbiased manner, and they check up very closely with statements regarding the disappointing results of night operation that have come to us from several manufacturers of highly competitive classes of yarns and cloths. Mr. Loper shows that the majority of mills operating day-and-night shifts on print cloths, sheetings and other highly competitive and normally

over-produced lines, gain only temporary profits that are more than absorbed by succeeding slumps of demand and selling prices; he also makes it very plain that the only certain beneficiaries of such night-and-day running are commission merchants and buyers.

Arthur T. Bradlee, the author of the other article of this series, at the time of his death, in the summer of 1925, had been president for several years of the William Whitman Co., dry goods commission merchants, and an officer and director of several southern and northern textile mills. Few men ever had a more intimate knowledge of the financial side of manufacturing and merchandising, or combined with it a fuller understanding of economics and sociology. He had an insatiable hunger for facts, and unusual ability to make practical application of them in business affairs. The facts regarding textile working hours contained in his article were collated under his direction during his last lingering sickness, when he knew that his death was only a question of a few weeks, and the views regarding the night shift therein expressed may be accepted as his final effort to continue of lasting service to the industry. He indulges in no humanitarian cant, but, with the exception of making it very evident that the United States has done less for labor in the way of working hours than most foreign textile countries, confines himself to the practical dollars-and-cents aspect of the problem.

Mr. Bradlee's article will be found familiar, in part at least, by many of our readers, for several copies were mailed by him to friends known to hold views similar to his, and they have given generous distribution to excerpts of the study among the industry's leading manufacturers, especially in the South. It may be as well to state that Mr. Bradlee did not indulge in theorizing, for at least one of the southern mills controlled by his firm was operated regularly on a day-and-night shift. His views were based upon years of experience and thought, and knowing his natural modesty and the sincerity and soundness of any views that he might express publicly, I can testify that he could have wished for no more tangible memorial than the control by the industry of night work and the elimination of "the ever-present threat of possible rapidly increased production to the point of over-production."

* * *

IN the reading of this symposium it must be recognized that its main objective is not solely the control of night work in cotton manufacturing (and we might also say wool manufacturing, for the production status of that branch of the industry is very similar) but the control and stabilization of production as a whole. It must also be understood that an exception may be made of those occasional mils operated upon goods that are practically non-competitive, if there are any that can claim such an isolated and enviable position more than temporarily. So incontrovertible are experience and the statistical facts that it must be accepted as a truism that the maximum day-time productive capacity of the cotton manufacturing industry of this country exceeds normal domestic consuming demand plus normal foreign demand for all of the most staple lines of goods, and that whenever production rises much above 8,500 million spindle hours a month a serious slump in production and selling prices is certain to follow.

We are suffering today from uncontrolled over-production; in 10 of the last 14 months the industry's machinery was operated more than 8,500 million spindle hours, and in two of these months over 9,000 million spindle hours. All previous production records were broken thereby, and it was not daytime, but night-time operation of a large percentage of the machinery that is responsible for present dull and unprofitable business. With about one-third of the southern and a small percentage of the northern spindleage organized for both day and night operation we have a potential monthly average of about 1,000 million spindle hours that can be credited to night operation of machinery. And the number and capacity of night-and-day mills is steadily increasing. Nearly all northern mills that move South become night-and-day mills and their potential productive capacity is more than doubled. It is estimated that approximately 50% of the southern spindleage operated regularly on a day-and-night shift is controlled by northern capital. The night shift, therefore, is not a sectional problem.

* * *

"BUT why," complain manufacturers whose plants and villages are organized for day-and-night shifts as a regular policy, "do you pick on us, when we are giving as permanent employment to all of our help as do day-shift mills?" Because, we reply, while our remarks are not aimed directly at them, it is impossible for them to disassociate themselves and the effects and penalties of their policy from those of manufacturers who operate night shifts intermittently.

* * *

SOME of the most important reasons why the night shift as commonly operated is economically unsound and a menace to the industry are as follows: First—It maintains a surplus reservoir of potential production, that, because of its assumed ability to reduce operating costs, is opened wider and wider as demand recedes, thus increasing over-production, resulting in larger inventory losses for night-shift than for day-shift mills, and delaying or defeating organized curtailment and control of production.

Second—For the first time we have a visual demonstration that organized control of production is possible through legal dissemination of statistics, and also a demonstration of that control being dangerously delayed and partially defeated by the night-shift.

Third—The slight temporary cost advantage that night-and-day mills may have over day-shift mills, operating upon highly competitive staple goods, is proved to be more than absorbed in the depression that always follows unbridled night operation.

Fourth—It is only a question of time before normal growth of the industry will catch up with the labor supply, at which time day-shift mills will have an important advantage in the competition for labor unless the night shift is paid much higher wages.

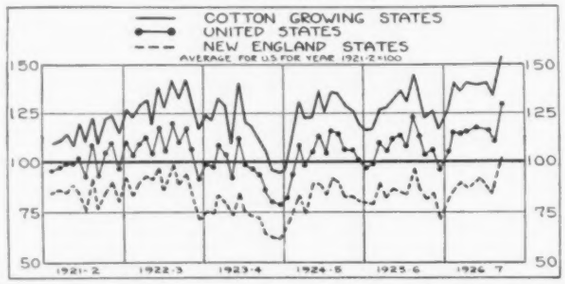
Fifth—It is only a question of time before most States North and South will restrict the employment of women and minors in factories at night.

In elaboration of the latter opinion it may be stated that legislative prohibition or restriction of night work would be most unfortunate for the industry in view of the increase of hand-to-mouth buying, and because of occasional need of running individual mills at night temporarily, either wholly or par-

TEXTILE WORLD

Cotton Industry Activity Index

Based upon average of active spindle hours per active spindle for period September, 1921 to July, 1922, 100 = 226



THE above chart illustrates accurately that part of the banquet address of President Walker D. Hines, of The Cotton-Textile Institute, in which he referred to the inevitable result of general overtime running of machinery, the recurring cycles of maximum and minimum production and absorption of profits gained by the former by the losses of the latter. It also makes very plain the fear expressed by President George S. Harris, of the American Cotton Manufacturers' Association, that demand may catch up with production before The Cotton-Textile Institute can put into effect remedial measures.

The chart shows indices of activity for the industry as a whole, for the cotton growing states, and for the New England states by cotton seasons, and it will be noted that in the month of March, which is the last month charted, that all previous records of productive activity were broken by a wide margin, even including that for 1923 when all previous records were broken.

It is possible that, as a result of hand-to-mouth buying and advancing cotton prices, a double peak may be touched prior to the final radical depression, as was the case following the boom of 1923, but it is certain that, as long as the margin between maximum and minimum active spindle hours is so wide, and the industry is so unstabilized, the period of maximum activity can be maintained for only three or four months at the most.

The Cotton-Textile Institute in its present partially organized state is incapable of forestalling the inevitable slump and individual manufacturers will once more be obliged to shoulder responsibility for failure to anticipate it.

It may also be true that a mill has made and will continue to make a given type or construction of goods resting on the idea that existing prices give a profit, and yet accurate cost accounting would show that as to that sort of r[illegible]ds there is a loss ly if the mill [illegible]ised as to would be a good thing from every standpoint of public interest.

Benefits of Stabilization

The more production can be con ducted along orderly lines, and the more enforced the drastic curtailments which must inevitably follow [illegible]us overproduction can more economic[illegible]

Prediction Whose Accuracy Has Been Demonstrated. Clipping Is From Issue of May 21, 1927, Reporting Atlantic City Convention of Cotton Manufacturers

tially. It would be equally unfortunate for manufacturer and operative in periods of peak demand.

There would be less incentive to political action if there were materially lessened regular night-and-day operation of mills in certain States, if not in all. This and effective control of both day-and-night production could be looked for with reasonable certainty in time if manufacturers would agree voluntarily and generally to pay sufficiently higher wages for night than for day work to make the former unprofitable, excepting at such times as goods are so scarce and demand so keen as to make it possible to pass along the higher cost to the buyer and final consumer.

* * *

IF it be admitted that these facts and opinions are correct, or even approximately correct, then, with the industry's productive capacity for an excess of normal trade requirements, the policy of operating a substantial percentage of machinery on a day-and-night basis is an even more serious and direct menace to the day-and-night mills than to the industry as a whole. It is likely, as Mr. Bradlee has suggested in his study of the problem, to become a boomerang for the night-and-day operators, and in the comparatively near future.

Night Operation Is Only Temporarily Profitable For Cotton Mills

Creates Dangerous Excess Capacity — It Is of Certain Profit Only to Commission Houses and Buyers

By R. E. Loper

Of Ralph E. Loper & Co., Textile Cost Engineers, Fall River, Mass., and Greenville, S. C.

THE extreme shortage of cotton goods and the resulting high prices which were obtained during the war period induced many mills to build up organizations for day and night operation.

At that time, this procedure was very profitable. The extremely large profit, which in some cases amounted to as much as ten times the normal profit per pound, fully justified the mills in striving for increased production, and where necessary, increasing the cost per pound to get it.

Today the picture has changed completely. Manufacturing margins on cotton cloth are extremely narrow at best, and many eastern mills find the market prices far below their cost of production.

Seeing that the majority of mills which started night operation have continued it, many mill executives, who still operate a single shift, have raised the question as to whether or not night operation would be a means of obtaining a satisfactory profit from a highly competitive market. To such it may be interesting to carefully analyze the problem in the light of the actual experiences of managements who have operated day and night shifts for many years.

Three Advantages Expected

There are three advantages which mill managements usually expect from night operation:

1. A lower manufacturing cost.
2. Twice as much product on which to make a profit for the mill.
3. Twice the volume of sales by which to double the profits of the selling house.

Every executive realizes that his fire insurance, state and local taxes, executive salaries and some other items of overhead are fixed charges. If the production can be doubled, the cost per pound for these items would, therefore, be cut in half. Against these savings there are certain items of cost which increase on night work. For example: In most sections it is customary to pay employees 10% higher wage rates at night. The efficiency of operatives is lower at night. In well-run weave rooms this will normally be from 5 to 8% below day operation.

In order to give proper weight to these and other important factors, a study of the results obtained by several well-run plants was made, and the following tabulations prepared on the basis of their experience. These mills paid 10% higher wage rates at night, but were able to entirely offset this by savings in yard, office and general labor. The production at night was 94% of the day production per hour.

A Possible 2% Saving

These tabulations indicate that well run mills now operating 55 hours per week, and maintaining their own villages can reduce their total costs about 2% by operating two shifts. On some of the leading print cloth constructions this represents about five thirty-seconds of one cent per yard.

In itself, this 2% reduction in cost is not sufficient inducement to warrant a mill in enlarging its village and incurring fixed charges which must be borne permanently by the daytime product in case they later decide to discontinue their night shift.

Comparison of Costs with Single and Double Shifts in Typical Southern Print Cloth Mill with a Village

Items of Cost	Cost on Day Operation	Cost on Day and Night Operation
Cotton with Waste	60.0%	60.0%
Pay Roll	21.8	22.5
Fixed Expenses:		
Taxes, Fire Insurance, Executive Salaries, Building Repairs and Depreciation, Miscellaneous Expense and Machinery Obsolescence	6.5	3.4
Expense which Increases with Extra Operation:		
Fuel, Power, Supplies, Machinery Depreciation	11.7	12.0
Totals	100.0%	97.9%

The reduction in cost due to day and night operation in a typical print mill is 2.1%.

Comparison of Costs with Single and Double Shifts in Typical Southern Coarse Sheeting Mill with a Village

Items of Cost	Cost on Day Operation	Cost on Day and Night Operation
Cotton including Waste	66.7%	66.7%
Pay Roll	18.0	18.5
Fixed Expenses:		
Taxes, Fire Insurance, Executive Salaries, Building Repairs and Depreciation, Miscellaneous Expense, and Machinery Obsolescence	5.6	2.9
Expense which Increases with Extra Operation:		
Fuel, Power, Supplies, Machinery Depreciation	9.7	10.0
Totals	100.0%	98.1%

The reduction in cost due to day and night operation in a typical coarse sheeting mill is 1.9%.

Double Shift, Not Double Profit

Some executives, who know that the reduction in cost due to night operation is comparatively slight, give as their reason for starting two shifts, the fact that they will get double the product on which to make a profit. This is practically true, but it does not follow that they will double their profit.

When the number of spindles in any one mill is compared with over 36,000,000 spindles in place in the United States, the ratio looks so small that it is easy to conclude that the market can absorb the extra product very easily without affecting the price. However, results from actual practice do not bear this out. The increased product is not spread over the whole industry, but is confined to the fabrics of the particular mill, and an effort is made to sell it to that mill's regular customers.

In order to bring out clearly the sensitiveness of the market to excess production, we have prepared a chart showing the spindle hours operated according to government reports and the corresponding margin between cotton and cloth prices. From this margin the manufacturer has to pay operating costs and get a profit if possible.

Excess Production Kills Margin

A study of this chart shows clearly that even a moderate increase in production above the market's requirements results in a substantial drop in the margin available to cover manufacturing costs and profit. During the past five years there has been a tendency for the margin to improve, if the active spindle hours remain below eight billion per month. When, however, the spindle activity reaches eight and one-half billion spindle

hours per month, the manufacturing margin drops sharply.

The importance of these drops in the manufacturing margin on print cloth, following 5 to 10% excess production, may be better realized when we recall that a profit of three cents per pound on print cloth is very satisfactory. The drop in margin resulting from only moderate over-production in 1926 was eight cents and in 1923 more than that.

Curtailment of course, brings somewhat higher cost because of the fixed overhead. It is interesting, however, to note that the amount of curtailment necessary to correct the market situation and avoid these serious drops in the manufacturing margin, would not increase the cost on this class of goods one cent per pound.

The Horse and the Oats

The market situation today may be illustrated by the following experience:

When I was a boy in high school, my father, who was a contractor, owned a number of horses. The men who cared for them never liked to get around early enough to allow the horses sufficient time to eat before starting out mornings. Accordingly, I was granted permission to install an automatic device which would operate nights, and gave the horses plenty to eat before the men arrived.

This was operated by an alarm clock and at the proper time opened a chute which delivered grain to each manger. It worked fine for several weeks until one of the horses tricked the device. Somehow, he managed to open the chute which led to the grain bin up stairs, and he got into his manger and stole all the grain from the bin.

When his driver arrived in the morning the horse stood in oats knee deep. His head was lifted high in the air for he had eaten so many he didn't even want to look at more. The horse recovered after a while, and night operation was discontinued permanently.

Many cloth buyers are in a position today comparable with this horse. They have had cotton cloth offered them so far in excess of their requirements that they do not even want to look at more and a reduction of prices below cost will not induce them to do so.

If only one mill in ten adopts a day and night schedule, the extra production causes a very marked reduction in the manufacturing margin. The only exception we have been able to find was during the abnormal market of the war period. This war period was probably the only time in recent years when night operation by a large group of mills on staple fabrics resulted in more than a temporary increase in their net profit.

Selling Agent a Sure Winner

The third advantage expected from night operation is to have twice the volume of sales by which to double the profit of the selling house. Owing to the arrangements usually existing between mills and their selling agents, this extra profit is usually realized even though the mill's total profit may be reduced.

Example: Suppose a mill is running day times producing 1,000,000 pounds of print cloth per quarter, selling it for 48c per pound and making a net profit of 5c per pound after paying four per cent selling commission. The following results would obtain:

Total sales per quarter	$480,000
Net profit for the mill	50,000
Commissions paid selling house	19,200

Now suppose the mill doubles its product by night running and thereby cuts its cost one cent per pound. Suppose also several other mills do the same thus increasing the print cloth available for sale in the market 8 or 10%. On the basis of past experience, this would soon result in a drop of at least four cents per pound in the selling price if the price of cotton remained the same. Then the following results would obtain:

Total sales 2,000,000 Lbs, at 44c per Lb.=$880,000 per Quarter.

Net profit for mill at 2c per Lb.= $40,000 per Quarter.

Commissions paid selling house at 4%=$35,200 per Quarter.

Certain Disadvantages

Having considered in some detail each of three advantages expected from night operation, it may be well to mention a few of the disadvantages frequently encountered:

1. Most operatives prefer to work days and skilled workers can usually find day time employment. The result is that the mill starts out with a handicap running nights.

2. Unless the labor supply is unusually large, the organization of a new night force causes a temporary shortage and results in bidding between mills for help, thus increasing the cost to each.

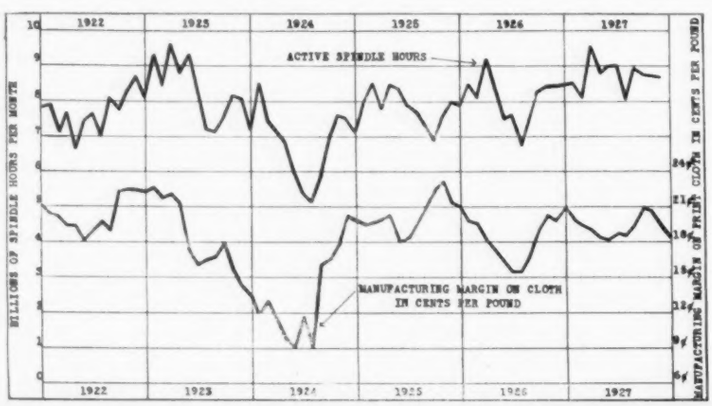
3. The quality of work produced at night is not so good, resulting in more second quality cloth.

4. The machinery is not so well cared for when run two shifts.

5. Industrial accidents are more frequent on night work.

6. The extra investment in a larger village carries with it fixed charges which must be paid out of the profit on the day time operation if the mill finds it advisable to discontinue night operation.

In view of the slight reduction in manufacturing cost and the very detrimental effect on the market of excess production, it seems evident that during normal periods of business, night operation does not permanently pay textile mills.



The Outlook for Cotton Textiles

By Spencer Turner

President, The Association of Cotton Textile Merchants of New York

THERE is ample support for the position that the present year will be a period which will bring the cotton textile industry to a new and more stable level of normality.

Such a view of the months immediately ahead, which obviously must take into consideration a number of factors which cannot be anticipated in this unusually hazardous industry, is based on three accomplishments of the two preceding years. These should bring even more impressive results than have been noted in the substantial progress made in 1927.

All of these changes have enabled the numerous elements of the industry to work with much more of a singleness of purpose.

It seems to me that the Association of Cotton Textile Merchants of New York led the way to this new attitude by its modest beginnings in statistical work nearly three years ago. This gave the industry for the first time in its history current information of its production and movement of goods. The value of this work is attested by its steady growth and expansion, and the importance which these statistics have gained not only as market factors but as guides in formulating sound mill policies.

The second important achievement within the industry has been the organization of The Cotton-Textile Institute by the mills and the support of sound fundamental policies which it has gained in turn from the mills in a little more than a year under the leadership of its president, Walker D. Hines.

Part of the value of such an organization has already been demonstrated in the forceful emphasis it gave during the last quarter of 1927 to a proper economic balance between production and demand.

Organization of Wholesalers

The third major factor which should contribute to the success of 1928 is of more recent origin, the organization of wholesale dry goods merchants of the country on a national basis under the direction of a single leader, Alvin E. Dodd. With a certain amount of co-operative awakening on the part of other elements in the industry naturally evoked by the progressive measures initiated by the mills it would seem as if 1928 should demonstrate some of the benefits of organized co-operation.

Skillful Merchandising Demanded

From the standpoint of the selling agent it is already apparent that the year will demand the most skillful merchandising. This will call for close attention to the primary markets, and its success will depend of necessity upon the general business conditions in the country, and close co-ordination of the selling agents' policies with the soundest manufacturing policies which the mills can adopt. Increasingly the mills have shown a disposition to produce for their actual or immediate markets, and if this continues with a better understanding of market conditions as reflected through the selling agents there should be progress of a permanent nature during 1928.

Fundamentally, the prospect for 1928 is sound. There have been favorable indications from other industries which take a considerable volume of the output of the cotton textile industry each year. More attention is being given to excellence of styling and design in those branches of the industry where these are outstanding factors.

In spite of the hesitation during the early weeks of the year stocks of goods in second hands are relatively low; and prices certainly are intrinsically low. With manufacturers and distributors more responsive to the economic factors of supply and demand there is every reason to anticipate that the industry will gain in stability and prosperity from the new orientation which organized cooperation has brought to it.

Existing Conditions Must Be Corrected

By J. M. Gamewell

General Manager, Erlanger Cotton Mills Co., Lexington, N. C.

Excess production over demand prevails. It is impossible to market merchandise on basis of current replacement cost. An evident lack of intelligent merchandising and cost finding prevails throughout the cotton textile industry. I do not consider the outlook promising unless existing conditions are corrected.

Analysis of Textile Working Conditions Proves Uncontrolled Night Work a Liability

Are United States Labor Laws Inferior to Foreign? —Stabilized Production Impossible With Night Shift

By the Late Arthur T. Bradlee
Former President William Whitman Co., Boston.
(Written in the Summer of 1925)

AT this time, when there is so much discussion as to the state of the cotton manufacturing industry in this country, it is interesting as well as instructive to consider conditions in other countries than our own on two questions of vital interest:

First, the laws or agreements with labor as to the hours of labor.

Second, the laws or agreements with labor as to the night employment of women and minors in textile mills, which fact, in practically all countries, has a great bearing on, if not actual control of, the question of night operation.

As to the hours of labor, I am informed from reliable sources as follows:

In Austria, Belgium, Czecho-Slovakia, Finland, France, Italy, Norway, Spain, Sweden and Switzerland, 48 hours per week has been adopted by law.

In Denmark and England 48 hours per week has been adopted by mutual agreement with labor.

In Holland 50½ hours per week has recently been adopted by agreement with labor.

In Germany the working hours vary from 51 to 54, according to local agreements in different localities.

In India and Japan the working time is 60 hours per week.

The South's Longer Week

From the above it will be seen that a working week of 48 hours has been almost universally adopted in foreign countries. In contrast with these foreign conditions, the United States of America has only one industrial state, Massachusetts, that has a 48-hour law, and while none of the so-called northern group of states has a maximum of over 54 hours, the working hours in the southern states are almost universally 55 and at times 60 per week.

I make no comment here as to the advisability or inadvisability of any one of the above hour-days, but merely state certain facts and tendencies as to such hour-day, and call attention to the fact, in view of what I later state in regard to night work, that at the present time the longer day of the southern mills gives them an undoubted special advantage over any of the countries of the world with the exception of Japan, India and possibly China.

Night Work of Women and Minors Prohibited

As to the night employment of women and minors in textile mills, I am similarly informed from reliable sources as follows:

At the first international labor conference held in 1919 there was passed a draft prohibiting the night work of women in industry, which draft has been ratified by Austria, Belgium, Bulgaria, Czecho-Slovakia, Esthonia, Great Britain, Greece, India, Italy, Japan, Netherlands, Poland, Serb Groat Slovene Kingdom, South Africa and Switzerland, and definite legislation prohibiting night work by women has also been put into effect by France, Germany and Canada.

While some of these countries may possibly at times employ the two-shift system, this can apparently be done by the use of male operatives alone, a fact that in most countries prohibits general night operation.

Laws Controlling Women Labor

A synopsis of the agreements or laws on this question of the night employment of women in a few of the leading cotton manufacturing countries may be of interest:

Great Britain

The pertinent paragraphs of the British Act of December 23, 1920, Part III, are as follows:

Article 2.—For the purpose of this convention the term "night" signifies a period of at least eleven consecutive hours including the interval between 10 o'clock in the evening and 5 o'clock in the morning.

Article 3.—Women without distinction of age shall not be employed during the night in any public or private industrial undertaking or in any branch thereof other than an undertaking in which only members of the same family are employed.

The above is the Act of 1920, but in this connection it is of interest to quote from a letter recently received from the general secretary of the International Federation of Master Conton Spinners and Manufacturers Associations:

"I have your letter of 30th April and in reply beg to state that during the last thirty years certainly there has been no night work performed in the cotton industry of Great Britain, not even during the war. At that time we did not even have sufficient work people to run during the daytime, nor was there enough cotton to go round."

Germany and France

The United States Department of Labor, Washington, D. C., write as follows:

"Replying to your inquiry of the fourth instant as to the prohibition of night work by women in textile factories in Germany and France, I have to say that under the French law nightwork by women is forbidden in workshops and factories generally, between the hours of 9 p. m. and 5 a. m.; not less than 11 consecutive hours of rest must be allowed except in emergencies and for limited periods.

"The German law forbids employment between 8 p. m. and 6 a. m., 11 hours of rest being prescribed as the minimum. These laws apply to females of all ages and to boys, and are of general application in industrial employments."

Italy

Legislative Decree as amended March 15, 1923:

5.—Women, irrespective of their age, shall not be employed at night in factories or workplaces or in annexes thereof.

The prohibition of night work for women shall not apply in cases of force majeure, when in any undertaking there occurs an interruption of work which could not be foreseen and which is not of a periodically recurring character. The prohibition may be suspended at seasons and in cases where women are employed in work on raw materials or materials in course of treatment which are liable to rapid deterioration, when night work is necessary to preserve the said materials from certain loss. The rules for the authorizing of such exceptions shall be laid down by the regulations for the administration of this Act.

For the purpose of this section the term "night" shall signify a period of at least 11 consecutive hours, including the interval between 10 p. m. and 5 a. m.

5a.—Young persons under eighteen years of age shall not be employed during the night in factories or workplaces or in annexes thereof.

Switzerland

Federal Act dated March 31, 1922, which by administrative orders came into operation on October 1, 1923, as referring to textile manufacture:

3.—Young persons who have not attained the age of 18 years shall not be employed at night.

Further, female persons, irrespective of age, shall not be employed at night.

"Night" shall mean a period of not less than eleven consecutive hours including the period from 10 p. m. to 5 a. m.

4.—The prohibition of night work may be suspended in the following cases.

(1) for persons not less than 16 and not more than 18 years of age, and women over 18 years of age, in the event of an interruption of the work of the undertaking due to force majeure which could not be foreseen and does not recur periodically.

Japan

Factory Act No. 46 of 28th March, 1911, as amended by Act. No. 33 of 29th March, 1923:

1.—This Act shall apply to factories: (1) where 10 or more persons are regularly employed.

4.—The occupier of a factory shall not employ a young person under 16 years of age or a woman between the hours of 10 p. m. and 5 a. m., provided that such persons may be employed until 11 p. m. with the sanction of the administrative authorities.

There are certain clauses allowing the authorities to temporarily suspend the above rule in emergencies resulting from a national calamity or actual or impending distaster.

Canada

Ontario.—Night work for women prohibited between 6:30 p. m. and 7:00 a. m., except in extreme cases when the restrictions are between 9:00 p. m. and 6:00 a. m.

Quebec.—Women are not allowed to work between 9:00 p. m. and 6:00 a. m.

I have no definite information as to China, but from the above it will be seen that practically all foreign countries, including Canada, have put into effect within the last few years, if not earlier, laws directly prohibiting the employment of women for night work in cotton manufacturing.

Lonely Position of United States

Of all the countries of major production the United States apparently stands alone in its continuation of night work by women; in fact, during the period that the very laws previously stated have been put into effect abroad, the United States has been rapidly increasing night operation in the southern states. While this trend to increased night work has been realized, it is interesting to look into it in some detail and to consider its possible effect upon the industry.

It is difficult to obtain accurate figures as to night work in the South. The State of North Carolina, however, issued through its Department of Labor and Printing, certain figures on night work, and an analysis of these reports covering the years 1914 to 1924 shows the following:

NORTH CAROLINA SPINDLES
(Based on State Department of Labor and Printing Reports)

	1914	1915	1916	1917-18
Total spindles	3,726,749	3,943,157	3,816,071	4,442,614
Night run spindles.	747,673	*	809,290	1,483,106
Percentage of night run spindles	20%		21.2%	33.5%

	1919-20	1921-22	1923-24
Total spindles	5,181,320	5,473,598	5,921,538
Night run spindles.	485,529	1,852,087	2,354,226
Percentage of night run spindles	9.4%	33.8%	39.8%

* No reports.

In the above summary it can be seen that night work greatly increased when this country entered the War (1917–18) the number of night-run spindles increasing over 80%. After

the War (1919-20) the reports point to a temporary falling off. The report for this period probably was made in 1919, when business slumped after the Armistice, rather than in the boom times of 1920. In 1921–22 night work apparently was at the war-time volume. The latest returns (1923–24) suggest an even greater amount of night work than during the War, and compared with 1924, the proportion in spite of the great increase in total spindles, has doubled.

All Southern States

If the spindles of other southern states were working the same proportion of night shifts as North Carolina, the "single shift" spindleage of the South would be as follows:

	1914	1923-24
Southern spindles	12,996,037	17,000,000
Double shift spindles	2,599,207 (20%)	6,770,000 (39.8%)
Total spindles on single shift	15,595,244	23,770,000

According to the above estimate, machinery on double shift in the South increased to the extent of about 4,000,000 spindles between 1914 and 1923–24.

Night Work Increasing

A study of monthly Census Reports on spindle hours at the present time shows a large proportion of night running. South Carolina, which is restricted to 55 hours a week, reports average spindle operations of 72 hours. At least 31% of night work is thus accounted for. The percentage is probably higher than that, for the reason that in order to show "full time" on the Census basis of figuring spindle hours, every spindle in the state would have to be first operated its full quota of day hours every working day for the entire month.

The exact accuracy of the above figures is not of importance; their real importance is to show the trend of the southern mills to the increased use of night work.

Northern Restrictions

In the North, night work for women is prohibited in Connecticut, New Jersey, New York and Pennsylvania between 10 p. m. and 6 a. m. and in Massachusetts between 6 p. m. and 6 a. m.; in fact there is comparatively little night operation in the mills of the northern states.

Result of Post-War Conditions

The increase in night work by the mills of the southern states is but the natural outcome of the War and the adjustment period we have been passing through since the conclusion of the War. The tremendous War demand for cotton products, especially those of coarser count, on which the southern states have specialized, gave every possible incentive, where both labor and cotton were available, to the increased product per unit of machinery made possible by double shift or night operation. The southern states, one of the few places in the world where during the War an abundance of both cotton and labor were readily procurable, quickly availed themselves of the opportunity to so increase their product, which, as long as it was readily salable, decreased their overhead and increased their profit.

Competition Caused Increase

The panic of 1920, with its attendant rapid depreciation of all cotton textiles, practically put a stop to this, and the increase from that time has been due largely to an attempt to meet the severe competition of the markets by the lessened cost of increased unit product brought home to the mills by their war-time experience.

This ability to so run at night has been one of the strong points brought forward for the erection of large, new plants or additions to old plants in the South and is one of the reasons for the transfer to the South of spinning, weaving and knitting machinery from other localities where because of law, lack of labor, or other reasons, such night work is impossible.

While other causes for depressed trade have been prevalent in many foreign countries, this rapid increase of possible or actual production in the United States has been an important factor in the depressed conditions that have prevailed and are still prevailing in the cotton industry of this country.

There can be little doubt that production has been in excess of demand, and while periodical curtailment may temporarily improve the situation, with the advent of improved conditions so brought about we may expect a return to the full day-and-night product by those who have been so running in the past, as well as a constant addition to their ranks by others in an endeavor to place themselves on a par to meet the competition of their neighbors. This will again lead to over-production, unprofitable operation, and material loss. The mills of the South, previously a small unit, have grown until they alone are now one of the largest units of production in the world, and the possible double running of their 17,500,000 spindles as soon as there is a profit on their product is a constant menace to the continuation of such profit and the stability of the market.

Not a Sectional Problem

Under the law of "the survival of the fittest" and the principle that looking after one's own interests is the first requisite of any business, it is not to be wondered at that manufacturers should at all times, and especially in bad times, make use of all opportunities open to them that seemingly put them at an advantage over some competitor. This possibility of night work is said to be one of the advantages of the South over other sections of the country, but the constant threat of overproduction from night work is not a sectional question; there is just as great if not more competition and lack of profit today on the cotton yarns and cloths which are alone produced in the South as there is between any goods of southern as against northern manufacture.

If we are producing too many goods for the demand it is to the advantage of every mill, every stockholder and every operative that overproduction should be stopped. Continuous, steady operation is necessary to the welfare of all three. There can be no question as to which is the more profitable and satisfactory condition for all three, between continuous, full day operation as contrasted with unsteady, intermittent and part time day and night operation. Short time is unprofitable to all; and the higher wages that must necessarily accompany intermittent or curtailed employment may far offset any advantages arising from the double shift.

Intermittent Employment

The building trades of Boston have lately held many conferences on disputes as to wages, and on this question of continuous occupation I beg to quote from a pamphlet recently issued entitled, "Irregularity of Employment as a Factor in High Labor Costs," by William Stanley Parker, member Committee on Seasonal Employment, U. S. Department of Commerce, Boston:

"The one time popular motto, 'I want what I want when I want it,' has summed up our attitude towards labor supply. Every one connected with the building industry has assumed that he need only press the button of demand at his entire convenience, and a supply of labor, of whatever kind, would promptly answer the bell. How this labor was supporting itself prior to his demand for it, or how it would support itself after he had done with its present services and until he might need it again, he gave no consideration. And yet therein lies a problem that is at the root of many of the difficulties of the industry and a large factor in the present high cost of building.

"It is somewhat elementary to say that a man supports himself during idle periods by what he makes when working, and yet that is generally overlooked when wages are being discussed, or rather the very existence of a period of idleness is overlooked. The wage under discussion is apt to be multiplied by eight hours a day and the number of working days in a year, and a year's income arrived at for purposes of spectacular comparison.

"I imagine that you would agree that a corporation that used its employees only to about 75% of their efficiency was uneconomically administered. That appears to be the case with the building industry, taken as a whole. Each owner or contractor, however, acting along general business principles, hires and fires labor as the occasions demand, endeavoring to show efficient use of labor so far as his own books are concerned. But he deceives himself if he pretends that by such methods he avoids paying for any idle labor. He cannot escape the fact that present wages have been pushed up to their present levels for various reasons—not the least potent of which is the plea of intermittent employment.

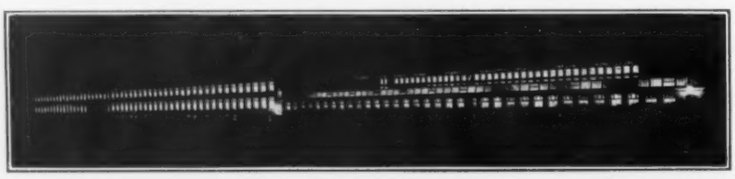
"Representatives of the labor group who have cooperated in the presentation and study of these facts have said to me, in substance, 'of course if you can eliminate this element of unemployment you will take away from us our chief argument for higher wages.'"

Not an Asset But a Boomerang

I have not touched here on the question of night work from a humanitarian or health standpoint but merely from the standpoint of economic welfare of the industry.

Many southern manufacturers have expressed the wish that night work could be stopped, but each is naturally afraid of being placed at a disadvantage with his neighbor.

The South has many natural assets and advantages not present in other cotton manufacturing districts of the United States, but I am in doubt as to whether the unbridled license for night operation is really an asset or a liability in the form of a boomerang. Practically every other country has discontinued it. Is it really an asset for the South? If it were known today that night work was to be discontinued I am confident that it would very quickly place the mills of the South at least in assured profitable operation and it would remove from the entire cotton textile trade of the country, from manufacturer to retailer, the present doubt they have of the permanency of any improvement or stability in values—a doubt that arises from the ever present threat of possible rapidly increased production to the point of overproduction.



Survival of the Fittest

By Garnett Andrews

President, Richmond Hosiery Mills, Rossville, Ga.

We feel that the year 1928 will necessitate the closest and most efficient methods of management yet used by the American manufacturer. It is going to become a question of the survival of the fittest and those manufacturers who can get their costs down will survive. Those that cannot, will see some red ink figures on their balance sheets. It is going to take the closest sort of scrutiny to come through. I feel that there is an over-production in hosiery; likewise in a good many other lines of business and only by economies and efficiency will the manufacturer be able to show a profit on his operations.

Outlook Depressing

By Ellison A. Smyth

President, Belton (S. C.) Mills

The outlook for the cotton manufacturer is very depressing. Notwithstanding the general curtailment of one day per week the goods market continues to sag, and orders are not satisfactory as to price and there is no inducement for the manufacturer to add to his stock of raw cotton.

World Rayon Production for 1927 Is Estimated at 265,900,000 Lbs., Gain of 46,000,000 Lbs.

Approximate Figures for All Countries Developed by Textile World's Manchester Correspondent

MANCHESTER, ENGLAND.

(Special to TEXTILE WORLD)

With due qualifications and reservations, owing to the fact that complete information from some countries is not yet available, TEXTILE WORLD'S Manchester (England) correspondent extimates the 1927 world rayon output at 265,900,000 lbs., as against 219,080,000 lbs. in 1926. The 1927 total was roughly estimated at 255,000,000 lbs. in the Special Rayon Issue of TEXTILE WORLD published Sept. 24, 1927, but the accompanying analysis indicates that this was too conservative.

THE production of rayon in 1927 has been carefully estimated at 265,900,000 lbs., an increase of about 46,000,000 lbs. over the generally accepted estimates for 1926. This figure, however, is subject to considerable possibility of amendment when full details are obtained from the various countries. European production has increased by approximately 33,000,000 lbs., the most marked increase having taken place in Great Britain and Germany, so far as can be ascertained at present.

In the case of Germany, a remarkable expansion in imports is known to have taken place, with the result that consumption within the country has expanded in an abnormal manner, for exports have not similarly increased.

The export trade of Europe requires further explanation for there were large stocks accumulated in the various countries during 1926 and as a consequence of this the exports in 1927 must be divided into two sections. One of these shows the export of yarn actually produced in 1927 and the other the exports from accumulated stocks. In the attached tables, the exports from old stocks are only given in certain cases for there is no information available as to the amounts so dealt with in countries where stocks were comparatively smaller.

In Asia, there has been a marked increase in consumption on the part of India. Production is increasing in Japan but in the case of China political troubles have not favored development.

No account has been taken of stocks of yarn produced in 1926 which only came into home consumption in 1927 and in this connection it is possible that in the case of the United States and perhaps Great Britain and some other countries to a much smaller extent, the actual consumption in the latter year was greater than is shown in the tables. The matter however primarily affects the United States and readers will have more accurate details than are obtainable here.

In conclusion it might be said that the average denier used in all countries is gradually becoming smaller with the result that the length of filament to the pound weight is steadily increasing. Following this it may be assumed that the actual increase in output of ultimate filament of the machines of the world is considerably larger than the figures shown would lead us to believe.

WORLD PRODUCTION AND CONSUMPTION OF RAYON—1926 and 1927

	1926				1927				
							Exports		
Country	Production Lbs.	Imports Lbs.	Exports Lbs.	Consumption Lbs.	Production Lbs.	Imports Lbs.	1927 Production Lbs.	Old Stocks Lbs.	Consumption Lbs.
Austria	3,500,000	1,870,000	2,917,200	2,452,800	3,500,000	2,000,000	3,000,000	.....	2,500,000
Belgium	13,100,000	900,000	7,000,000	7,000,000	16,500,000	1,100,000	8,800,000	.....	8,800,000
Czecho-Slovakia	2,800,000	3,788,000	1,555,000	5,033,000	3,500,000	5,300,000	3,700,000	1,300,000	5,100,000
France	17,500,000	2,167,660	2,396,680	17,270,980	19,800,000	600,000	5,000,000	4,000,000	15,400,000
Germany	26,000,000	10,010,000	8,200,000	27,900,000	35,500,000	17,600,000	8,200,000	.....	44,900,000
Great Britain	25,500,000	1,799,980	5,425,496	21,874,484	36,000,000	2,750,000	8,350,000	.....	30,400,000
Holland	13,500,000	500,000	11,976,800	2,023,200	16,500,000	500,000	14,500,000	1,000,000	2,500,000
Italy	35,000,000	1,684,000	21,540,371	15,143,629	37,000,000	1,000,000	21,000,000	5,000,000	17,000,000
Poland	2,000,000	.....	1,500,000	500,000	2,750,000	250,000	1,000,000	.....	2,000,000
Spain	300,000	3,800,000	.....	4,100,000	300,000	4,200,000	.....	.....	4,500,000
Switzerland	8,000,000	2,213,200	6,410,800	3,802,400	9,000,000	3,500,000	6,000,000	500,000	6,500,000
Other European	1,335,000	.....	.....	2,500,000	1,700,000	.....	.....	.....	3,500,000
Total European	148,535,000	.....	.....	109,600,493	182,050,000	.....	.....	.....	143,100,000
China	.....	3,000,000	.....	3,000,000	.....	2,500,000	.....	.....	2,500,000
India	.....	4,000,000	.....	4,000,000	.....	9,000,000	.....	.....	9,000,000
Japan	5,500,000	3,500,000	.....	9,000,000	9,000,000	3,000,000	.....	.....	12,000,000
Total Asiatic	5,500,000	.....	.....	16,000,000	9,000,000	.....	.....	.....	23,500,000
Canada	2,250,000	700,000	.....	2,950,000	2,500,000	2,200,000	.....	.....	4,700,000
United States	62,575,000	10,125,000	.....	72,700,000	.....	.....	.....	.....	.....
Other North American	.....	750,000	.....	750,000	72,000,000	16,000,000	.....	.....	88,000,000
Total North American	64,825,000	.....	.....	76,400,000	74,500,000	.....	.....	.....	93,450,000
Total South American	220,000	3,500,000	.....	3,720,000	350,000	5,000,000	.....	.....	5,350,000
Total Australasia	.....	2,500,000	.....	2,500,000	.....	3,000,000	.....	.....	3,000,000
Balance estimated for loss between producer and consumer	.....	.....	.....	10,859,507	.....	.....	.....	.....	.....
GRAND TOTAL	219,080,000	.....	.....	219,080,000	265,900,000	.....	.....	.....	268,400,000

Rayon, with Record Production, Achieves Stability and Consumer Acceptance

Domestic Trades Absorbed About 100,000,000 Lbs. in 1927—Marked Technical Progress Achieved

By Douglas G. Woolf

"RAYON has emerged from the obscurity of the bargain basement and chain store to a stable position on the counters of our best stores."

This statement, made to the writer by one of the outstanding executives in the rayon field, expresses tersely but graphically the most important contribution which the year 1927 made to the development of this synthetic fiber. The consumer acceptance of rayon, and its acquisition of a stable position in the ranks of textile materials, overshadow all other phases of its progress during the last 12 months. This fact becomes increasingly significant when it is realized that rayon started the year under a cloud.

The substitution of consumer acceptance for consumer skepticism is best reflected in the figures on domestic consumption. During 1927, the textile trades not only absorbed the carry-over of approximately 12,000,000 lbs. from the depression of 1926, but consumed a new production of 75,000,000 lbs., plus imports of about 16,000,000 lbs. This accounts for an apparent domestic consumption last year of over 100,000,000 lbs., or more than the total *world* consumption of real silk. The complete absorption of this amazing quantity is indicated by the fact that rayon manufacturers carried into 1928 stocks of less than 2,000,000 lbs., representing the minimum which can be carried in the routine conduct of this business.

However, the same pessimists who have been predicting the end of the rayon "boom" for the last eight years, are already pointing to 1928 as the year in which the bubble will finally burst. They point to the increase in potential capacity of existing units, and to the plans for new units, as proof positive that our potential supply is now reaching a point far in excess of the apparent demand.

Here is where statistics come in handy. In 1926 domestic production plus imports amounted to approximately 73,000,000 lbs. As stated previously, about 12,000,000 lbs. were carried over into 1927 so that the probable consumption in 1926 was not much in excess of 60,000,000 lbs. The year 1927 therefore witnessed a 66⅔% increase in consumption over the previous year.

Let us suppose that 1928 will witness even one-half that percentage increase in consumer demand over 1927. TEXTILE WORLD'S estimate of domestic production for 1928 is 95,000,000 lbs. This means that a deficit of over 30,000,000 lbs. would have to be made up by importation.

Here the question arises: What basis is there for anticipating such a rate of increase?

This question, like all others connected with the progress of any industry and particularly of a new industry, cannot be answered with any degree of certainty. However it must be re-emphasized that there was no indication of slackening in demand at the start of this year. Furthermore this factor of consumer acceptance promises to be strengthened by organized effort during 1928.

Rayon owes its new position of stability as a textile material to the improvements that have been effected in the yarn and in the products made therefrom. Domestic rayon plants manufactured in 1927 the highest quality of rayon yarn that has ever been produced. Textile mills, learning from the depressing experience of 1926, concentrated on the technique of rayon utilization and produced better materials than have ever been known.

This development has not been arrested. On the contrary there is now in progress more intensive investigation along the lines of yarn and fabric improvement than has been carried on at any time in the past.

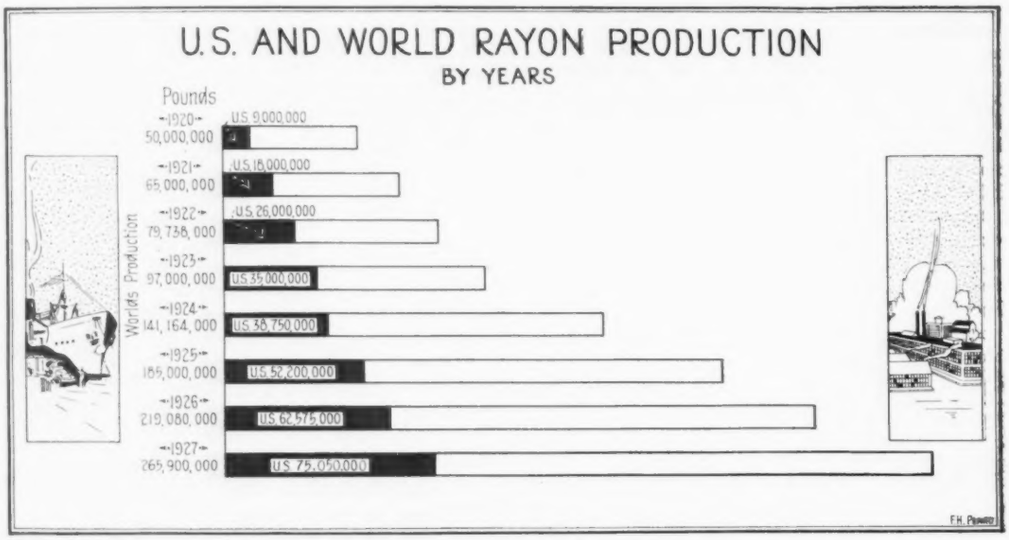


CHART I

TABLE I—TEXTILE WORLD'S ESTIMATE OF DOMESTIC RAYON PRODUCTION

	1924 Lbs.	1925 Lbs.	1926 Lbs.	1927 Lbs.	1928 Lbs.
The Viscose Co	28,000,000	35,000,000	37,000,000	41,000,000	51,000,000
Du Pont Rayon Co	4,000,000	6,761,560	10,900,000	15,100,000	19,000,000
Tubize Artificial Silk Co	4,250,000	5,200,000	7,000,000	7,500,000	9,500,000
Celanese Corp. of America	.....	1,500,000	2,500,000	3,500,000	5,000,000
Industrial Rayon Corp	2,000,000	2,250,000	3,400,000	3,450,000	4,250,000
Belamose Corp.	.....	675,000	875,000	1,400,000	1,700,000
Delaware Rayon Co	.....	.....	.....	500,000	1,400,000
Acme Rayon Corp	.....	322,665	400,000	500,000	650,000
Other firms	600,000	500,000	500,000	2,100,000	3,000,000
Total	38,850,000	52,209,225	62,575,000	75,050,000	95,500,000

Coupled with this is the determination on the part of rayon producers to conduct an educational campaign so that retailers and consumers will know just exactly what rayon is and how effectively it can be used. This determination is reflected in the formation of the Rayon Institute by four of the prominent manufacturers—and also in the individual efforts of other important firms.

It is on the basis of these facts that men in touch with the rayon situation predict a continued expansion in demand. The more conservative ones with whom the writer has talked estimate the probable domestic consumption for 1928 at between 115,000,000 and 125,000,000 lbs.

However, in our opinion, the probable amount which will be used in 1928 is not in itself fundamentally important. The writer has continually referred to the "dips" and "peaks" which are inevitable in the development of a new fiber. We passed through one of these "dips" in the last half of 1926. There is no one who can state with any degree of certainty that 1928 or 1929 or any other year for that matter might not witness another drop of the curve. There is always the possibility of production temporarily exceeding demand just as there is of demand exceeding production.

Counteracting this however—and here too the writer has been equally repetitive—is the fact that no limit can be set to the possible consumption of synthetic fibers as the engineer and chemist, working hand in hand, produce a continually improved material.

Technical Progress

Comparison of rayon with silk is not entirely sound but is useful in that it affords a relative basis for the evaluation of the progress made in the quality of the former. There are three points in which silk excels rayon: Fineness of filament; tensile strength, particularly when wet; and naturalness of luster. The extent to which the differential in each of these three phases has been reduced during recent years represents a remarkable story of industrial romance. The extent to which it will be cut down still further in the future cannot be estimated definitely but can be visualized by those who have a true conception of the possibilities of scientific research. Real silk is in more or less a static position. As one expert expressed it to the writer, "you can't teach a silk worm new tricks." This cannot be said of the chemist and the engineer.

During 1927 for example there was tremendous development in the production of quality multi-filament rayon yarns and in the finer sizes. A 35 denier artificial silk appeared on the market and its production did not approach the apparent demand for it. Similarly experiments have been carried on whereby rayon filaments as fine as, and even finer than, those of natural silk, have been produced and have withstood preliminary tests of their ability to endure the rigor of mechanical handling. This development is not in the commercial stage but is an index to the possibilities of the future.

Such technical phases as these continue to be the most significant features of progress in synthetic fiber manufacture. All indications point to the verification of the opinion previously expressed in these columns, viz., that upon research depends the real future of the industry. The stability which has been achieved by rayon from an economic standpoint does not characterize the technique of its manufacture. This must be regarded still as in a state of flux. No one can predict even a year ahead just what changes may be made in the underlying premises and methods.

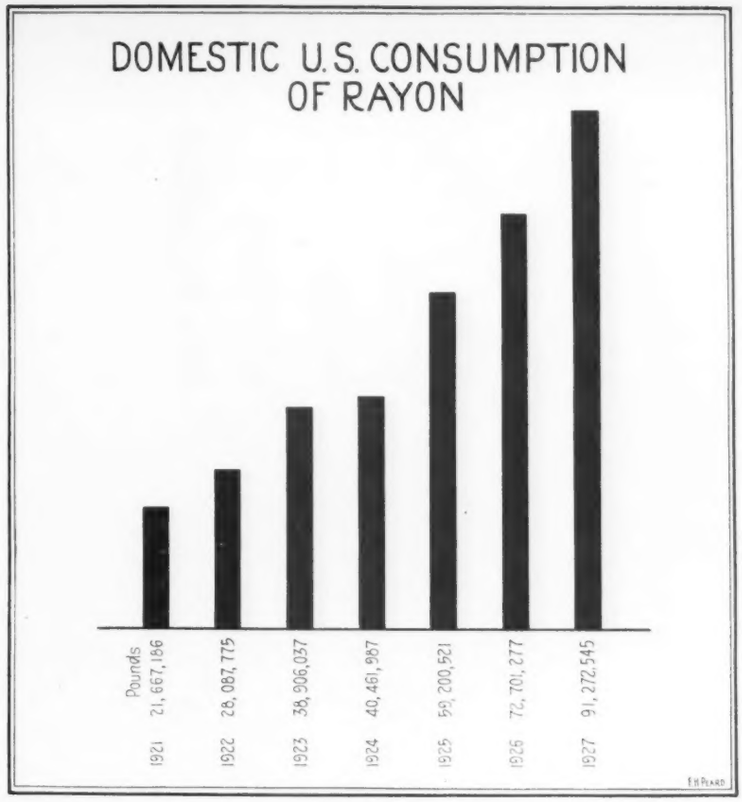


CHART II

Represents Production Plus Imports

Production Estimates

That this situation is generally appreciated is indicated by the fact that relatively few new enterprises have been launched during the last year in comparison with the number of new projects in the earlier years of the rayon impetus. Of those which have been launched, the majority can be regarded as potentially sound additions to the industry. In other words it is now realized that rayon manufacture is not a fertile field for "wild-cat" ventures. It can permanently attract only those organizations and individuals who have sufficient financial backing and technical assistance to enable them to withstand the changes which research and development are effecting and may be expected to effect in the future.

A glance at Table I, covering TEXTILE WORLD's estimate of domestic rayon production for the year just closed as compared with 1926, and its forecast for 1928, will show that the field is still limited to a relatively few producers. It is particularly interesting to note that approximately 85% of the 1927 output was manufactured by three firms.

TEXTILE WORLD's estimate of 75,050,000 lbs. for 1927 checks very closely with the estimate of 74,320,000 lbs. made by this publication in September in its special Rayon Issue. The revised estimate for 1928 however is nearly 6,000,000 lbs. in excess of the forecast made at that time. The increase is largely due to the additional output anticipated by The Viscose Co. Naturally the probability of actually realizing the total of 95,500,000 lbs. for 1928 depends to a considerable extent upon the condition of business during that period.

As a supplement to Table I, Chart I shows graphically the progress made in both United States and world rayon production, by years, from 1920 to 1927 inclusive. The estimate of 265,900,000 lbs. for the 1927 world output is based on an analysis made by the Manchester (England) correspondent of TEXTILE WORLD which will be found in another article in this issue. This forecast is in excess of the estimate of 255,000,000 lbs. made by the writer in September of last year but it should be realized that any attempt to figure on world production at this time must be hedged with qualifying phases since more definite information will not be available until later in the year.

Domestic Consumption

An attempt to plot graphically the domestic consumption of rayon during recent years has been made, and the results are shown in Chart II. The totals have been reached by taking the production plus the imports for each year. It must be realized that these figures are not absolute since they do not allow for the carry-over of stocks from one year to another. As a matter of fact this qualification applies principally to the years 1926 and 1927. During the years from 1921 to 1925 inclusive, available stocks, whether of domestic or foreign origin, were absorbed within each calendar year to a large extent. At the end of 1926 however approximately 12,000,000 lbs. were carried over into the next year and consequently the actual consumption in 1927 was greater than that

TABLE II—CONSUMPTION OF RAYON BY INDUSTRIES

(Figures Supplied by The Viscoe Co., for Their Production)

% Consumed in:	*1924*	*1925*	*1926*	*1927*
Hosiery	23	28	25	21
Cotton Goods	15	26	21	24
Silk Goods	18	16	14	14
Underwear	11	13	24	28
Other Knit Goods	14	5	3	4
Woolens and Worsteds	1	1	1	1
Braids, Elastics, Etc	....	....	1	2
Miscellaneous	18	11	11	6
	100	100	100	100

(Figures Supplied by Du Pont Rayon Co., for Their Production)

% Consumed in:	*1924*	*1925*	*1926*	*1927*
Hosiery	19	18	23	24
Cotton Goods	14	23	20	17
Silk Goods	22	18	11	12
Underwear	4	6	28	37
Other Knit Goods	14	10	5	2
Woolens and Worsteds	....	....	....	....
Braids, Elastics, Etc	....	....	3	1
Miscellaneous	27	25	10	7
	100	100	100	100

shown in the chart. The presentation is of interest however in that it indicates the steady advance made during the last seven years.

In connection with this question of consumption, Table II shows the percentages taken by the various branches of the textile industry. These tables are based on figures supplied by The Viscose Co., and by the Du Pont Rayon Co. Since these two companies manufactured approximately 75% of the domestic production, their estimates may be regarded as fairly representative. It is particularly interesting to note the increased consumption of rayon by the cotton goods industry reported by both these companies. Underwear has also represented an expanding market for the fiber, and this is particularly true in the case of the Du Pont figures. "Other Knit Goods," including outerwear and knitted fabrics, continue to require only very small percentages. This branch of the textile industry has shown no tendency to regain its previous high position among rayon consumers. In the case of certain of the companies producing, at present, smaller quantities of rayon, figures on percentages vary considerably from those shown in Table II. One firm for example sold 50% of its output to cotton goods manufacturers and 30% to hosiery mills.

The Import Situation

Imports of rayon reached a new high level in 1927. Figures by months for the years 1924 to 1927 inclusive are shown in Table III. No better index to the consumptive ability of the textile trades can be found than in these figures, since the amazing total of approximately 16,000,000 lbs. was brought in from abroad in addition to a domestic production of 75,000,000 lbs. and a carry over of 12,000,000 lbs. which was dissipated during the year.

In connection with this phase of the rayon situation, it should also be stated that the quality of the yarns imported from most foreign firms has continued to show marked improvement. Even the most ardent "100% American" can no longer refer to imported rayon in the slighting tone which was used—and largely justifiably—a few years back.

Possibly of particular interest is Table 4 which analyzes imports of rayon during the last four years by countries. It will be noted that Italy led the field in 1927 by a wide margin.

A graphic presentation of the imports during recent years is shown in Chart III.

Price Situation

Rayon prices in 1927 reflected the stability achieved by the fiber as a textile raw material. The year 1926, one of serious depression particularly in the latter half, was characterized by sharp reductions and general uncertainty. In 1927 however the price of $1.45 for 150 denier, A grade, which was in effect at the beginning of the year, continued until March 16 when the small advance of 5c per lb. was made. The resulting price of $1.50 was maintained as the basis for the remainder of the year, as shown in Chart IV.

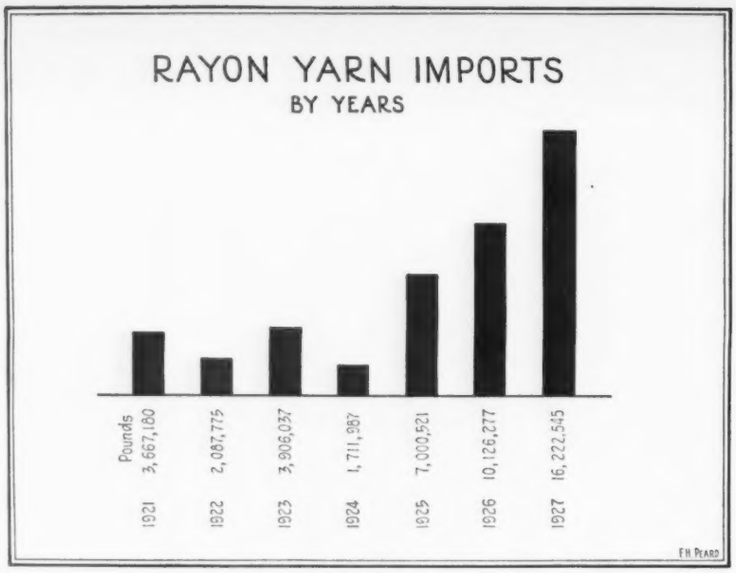


CHART III

One point must be emphasized here, viz., that rayon is still a relatively small factor as compared with the total raw material absorption of the industry. Using 1926 figures as a basis—since absolutely definite data are not available on all fibers for 1927—the writer estimates that the world consumption of rayon in that year was only approximately 1½% of that of cotton and 7% that of wool. With silk, the story is different as rayon production was probably almost 2½ times that of natural silk. These percentages were altered to some extent in 1927 but not sufficiently to affect the general ratio materially.

Progress by Companies

Outstanding developments in the progress of individual companies are indicated below. Where a company is not included, this indicates either that no important expansion or change was noted during the year or that definite information was not available.

Acme Rayon Corp., Cleveland, Ohio (Viscose process): Steady increase in output, noted during recent years, continued during 1927.

American Bemberg Corp., Elizabethton, Tenn. (Cuprammonium process): Work started on second unit which will double capacity, and broad plans outlined for eventual construction of five units.

American Glanzstoff Corp., Elizabethton, Tenn. (Viscose process): Construction of first unit of this new enterprise started. Broad plans call for steady addition of other units in the future.

Belamose Corp., Rocky Hill, Conn. (Viscose process): Continued its steady increase in output.

Burlington, N. C.: Plans outlined for establishment of plant with initial investment of $8,000,000, financing of which is to be directed by Albert M. Johnson, president of National Life Insurance Co., of Chicago.

Celanese Corp. of America Inc., Amcelle, Md. (Acetate process): Steady increase in output and construction started on new plant additions.

Delaware Rayon Co., New Castle, Del. (Viscose process): Started production and gradually increased same during year, manufacturing a total of 500,000 lbs. in 1927 with probability of 1,400,000 lbs. in 1928.

Du Pont Rayon Co., Buffalo, N. Y., and Old Hickory, Tenn: Continued steady increase in output of viscose rayon at these two plants. Also acquired manufacturing and sales rights for United States for "Rhodiaseta" acetate rayon, now made in France. Acquired tract of land near Richmond Va., for future expansion; not definitely decided whether this will be used for acetate plant but understood to be probable.

Furness Corp., Gloucester City, N. J.: Incorporated with capital of $10,000,000 to manufacture rayon under process developed by William H. Furness. Understood to be backed by interests identified with the Welsbach Co., a subsidiary of the United Gas Improvement Co.

Industrial Rayon Corp., Cleveland, Ohio (Viscose process): Continued to enlarge output of its plant.

Skenandoa Rayon Corp., Utica, N. Y. (Viscose process): Made steady progress in realizing capacity originally planned for plant.

Tubize Artificial Silk Co. of America, Hopewell, Va. (Nitro-cellulose process): Continued to increase output. Reports of plans to double capacity not confirmed by company. Developed a 35 denier artificial silk during the year.

Viscose Co., Marcus Hook, Pa.; Lewiston, Pa.; Roanoke, Va.; Parkersburg, W. Va.; (Viscose process): New (plant at Parkersburg got into operation and progress made with sixth unit at Roanoke. Anticipates output of 51,000,000 lbs. in 1928.

Rayon Enters Year on Stable Basis

By S. A. Salvage

President, The Viscose Co.

THE year 1927 has been distinctly the most active one for the rayon industry.

The year started with a very large unsold stock on hand of 1926 production, but the demand not only consumed all of this stock, but also absorbed 1927's increased production, and the industry enters the year 1928 on a more stable basis than for some years past.

The demand for the higher grades has been such that there has been a decided shortage in these qualities, and while such a condition is generally the forerunner of an advance in price, The Viscose Co. has felt, and undoubtedly other producers have too, that any sacrifice made in this connection is more than compensated by the advantages of the stabilized market.

The particularly active rayon yarn outlets were the cotton and underwear lines. Other outlets kept pace with the increased yarn production, but the former exceeded all expectations.

The only distinctively new outlet of any volume was men's underwear, which is experiencing a healthy and consistent growth. The launching of this, no doubt, was due to the hearty reception given the ladies' underwear garments made with rayon.

There will be an increase in Ameri-

TABLE III—RAYON YARN IMPORTS, BY MONTHS

	1924 Lbs.	*1925 Lbs.*	*1926 Lbs.*	*1927 Lbs.*
January	251,951	205,627	597,103	680,610
February	132,717	619,408	643,448	861,339
March	87,430	522,139	1,257,034	1,757,208
April	89,444	431,686	739,247	1,518,320
May	96,555	332,737	769,477	1,785,538
June	144,664	308,592	857,912	1,312,912
July	78,050	546,695	739,128	1,231,124
August	119,196	590,357	661,759	1,510,748
September	181,614	622,304	878,604	1,129,476
October	170,120	825,223	995,315	1,385,745
November	170,238	1,118,679	964,164	1,285,157
December	190,008	877,064	1,023,096	1,764,368
Total	1,711,987	7,000,521	10,126,277	16,222,545

can production in 1928, but this will not much more than balance the stock 1927 carried over from 1926; and therefore, the actual quantity available for sale in 1928 will be only slightly greater than the current year.

In view of this, I cannot see that a surplus supply can be expected next year.

Confidence in Rayon Warranted

By L. A. Yerkes
President, Du Pont Rayon Co.

THE opening of 1928 finds the rayon industry in a much more favorable position than was the case a year ago. The present schedule of prices is essentially the same as that in effect at the early part of 1927. A year ago, however, there existed in the hands of producers large stocks of rayon which have since been consumed. When the figures are all available we shall probably find that the United States consumed during 1927 a total of 100,000,000 lbs. of rayon yarns.

Why, then, should we view the year ahead of us with anything but confidence, with inventories of rayon probably sub-normal; the spread of its uses continually expanding; the quality and value of the yarn constantly improving and an increasing acceptance on the part of the public to the real worth of articles made from rayon?

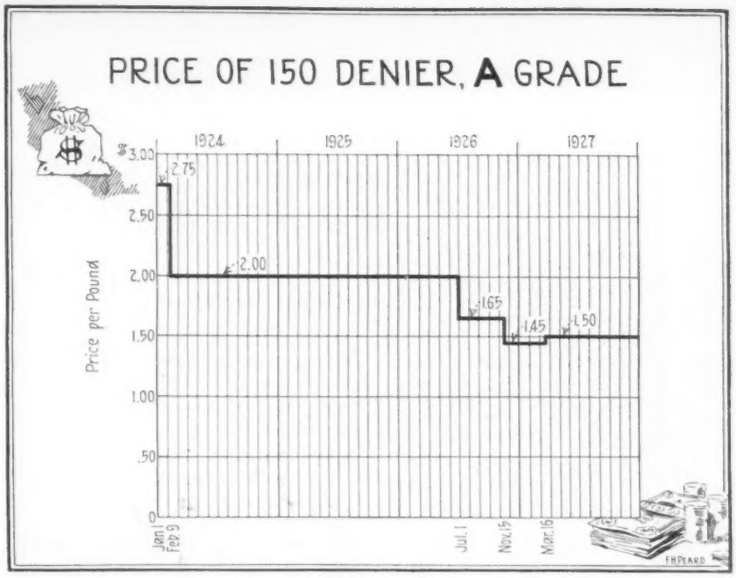


CHART IV

Use of Fine Sizes to Increase

By E. V. Peters
Vice-President, Tubize Artificial Silk Co. of America

THE consumption of artificial silk in the United States has increased every year since its introduction in this market several years ago. This increase of consumption over a period of years has made necessary wide expansion of productive facilities, so that at present it may be regarded as one of the major industries in the country. Millions and millions of dollars are invested in plants and equipment and thousands of people are given employment in widely scattered sections of the country.

During 1926, due to the depression in the textile industry generally, the supply of artificial silk exceeded that required for consumption so that large accumulations of artificial silk were carried in to the year 1927 by nearly all the producers. The year 1927, however, absorbed not only the increased production of the domestic manufacturers but these accumulated stocks as well, so that the producers entered the year 1928 with shelves clean, so to speak. The domestic consumption in 1927 was approximately 100,000,000 lbs., of which the domestic producers supplied about 85,000,000 lbs., and 15,000,000 lbs. were imported. This gives a very brief picture of the present situation as far as consumption and supply is concerned and naturally leads to the question—What is the outlook for 1928?

Quality Improvement

It is a very significant thing that during the last two or three years, particularly, there has been not only an increase in the consumption of artificial silk, but the quality has materially improved and with this improvement in quality has come the gradual widening of the uses for the commodity. In merchandising fields we have seen a steady "marking up" process insofar as merchandise containing artificial silk is concerned. It is no longer a basement merchandising proposition; products of all kinds containing artificial silk may now be procured in the better shops and stores throughout the country, and this process will certainly continue. In my opinion, one of the outstanding characteristics of the year 1928 will be the superior type of merchandise into which artificial silk will enter. We have seen quite a change in the last few years in the public acceptance of artificial silk and this is due to the fact that better artificial silk is being produced, manufacturers have learned how to properly handle it in all their manufacturing and finishing operations and the public has learned how to treat it in finished merchandise.

Use of Finer Deniers

As we go along producing better qualities of artificial silk we are accompanying this with finer deniers. These finer deniers make possible the creation and production of most beautiful fabrics and garments of a type obviously not possible with the coarser threads. We shall see during 1928, from time to time, fabrics and garments offered to the public containing these really fine sizes of artificial silk which will have a public acceptance that will still further elevate artificial silk in the minds of the public. Our own company, believing this to be the case, has recently offered the American market fine sizes of artificial silk in the range from 35 to 100 denier and, since this has occurred, fabrics and garments are now on the market that a few years ago were absolutely impossible with artificial silk. Artificial silk of the coarser sizes placed silk-like underwear and hosiery within the reach of the masses of the people. In the same manner these fine sizes will place within the reach of the masses of the people fabrics, dress goods and a wide variety of textile products of the better kind and within the reach of the pocketbook of an increasing number of people.

For 1928, I believe that we are justified in looking forward to: First, a larger consumption than last year; second, improvement in the quality of the average grade of artificial silk, and third, the material widening of the market for the really fine sizes.

TABLE IV—RAYON YARN IMPORTS INTO U. S. BY COUNTRIES

	1924 Lbs.	1925 Lbs.	1926 Lbs.	1927 Lbs.
Austria	16,826	149,259	352,494	425,467
Belgium	274,960	589,840	739,509	585,815
Czechoslovakia	18,417	21,256	9,734	1,238
France	13,376	298,344	713,412	2,863,509
Germany	231,288	1,515,016	2,554,192	2,603,123
Italy	107,573	2,261,965	2,489,284	6,747,229
Netherlands	577,551	1,003,682	2,587,337	2,627,529
Switzerland	126,343	470,934	509,806	243,479
United Kingdom	345,292	600,583	107,030	53,773
Canada	358	16,707	.....	49,460
Hong Kong	3	.....	.....	.....
Gibraltar	.....	13,813	.....	.....
Poland & Danzig	.....	54,732	13,093	.....
Spain	.....	10	50,100	.....
Japan	.....	4,380	.....	687
Hungary	.....	.....	25	20,123
Greece	.....	.....	.....	70
Argentina	.....	.....	.....	880

Use of Multi-Filament Yarns

By L. H. Bonn
Of American Bemberg Corp.

MANUFACTURERS formerly engaged in using synthetic yarns have expressed their intention of using greater quantities during 1928.

Manufacturers who never have used much synthetic yarn in the past, but are interested in a fine quality of yarn of multi-filament, have expressed their intention of entering into the use of synthetic yarns.

There will be a greater diversification in use of synthetic yarns during 1928 than we have ever seen before. This may be considered true particularly of fabrics which have style appeal and of higher selling value than made heretofore.

There is a waning interest in seamless hose of inferior construction on certain types of machines, and manufacturers maintaining such equipment are seeking multi-filament yarns which will produce a better quality garment. Such equipment, therefore, will not remain idle.

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Effect of Fine Filaments and Moisture Regain On Plating of Rayon in Knitting

Experiments at New Bedford Textile School Show Moisture Increases Covering Qualities of Rayon

By L. G. Manning

Head of Knitting Department, New Bedford Textile School

PLATED work in the knitting mill to-day, especially in meeting the requirements of the hosiery trade, is a problem which is giving the average mill man considerable to think about. The work consists of plating or covering one yarn with another, usually with the better grade or more expensive yarn appearing on the face of the fabric. Originally it was used as a means of cutting down the cost of material used in the fabric or garment; but, with the advent of the jacquard machine, varied color effects and patterns of all kinds are being produced, until now it is a problem of design requiring plenty of thought and study to create new and appealing effects.

Soft, Pliable Yarns Needed

The natural characteristics of the yarns used for this work governs to a great extent the effect obtained in the fabric made and also the method used for handling them at the machine. The covering yarns must be of a soft, pliable nature with good covering qualities to give the best results in plating. Hard-twisted, smooth-finished yarns are lively and very difficult to control as they are going through the formation of a stitch. It is necessary then to resort to tensions which in turn subject the yarns to considerable strain and stretch and in extreme cases do not entirely overcome the trouble. To obtain perfect plating in knitting, the yarns are undoubtedly given a harder test on their strength than in any other operation in the mill.

Rayon yarns of the ordinary type are not considered ideal yarns for plating, due to the lack of covering qualities. A study of the cross sections with which the mill man by now is more or less familiar shows plainly that some yarns are better adapted for plating than others. There are, however, other characteristics of the yarns to be considered, such as twist, moisture regain, number of filaments in the cross section, and the diameter of the yarn. Most of this information can be obtained very easily under the microscope. Photomicrographs are shown in Figs. 1, 2, 3, and 4. Their relative covering power is indicated here in these pictures, decreasing in the order in which they are numbered.

Moisture Softens Rayon

Every knitter knows that a soft, pliable yarn is very suitable for plating, and from tests made thus far all indications are that moisture will soften any rayon yarn being used at the present time. The moisture regain in rayon yarns will vary according to the process under which it is made, the amount of twist, the number of filaments used in the yarn, and the construction of the individual filaments. Moisture regain is an item of great importance that must be considered when handling rayon yarns, so that atmospheric conditions, which vary at all times and in all places, will ultimately affect the action of the yarn at the knitting machine. Indications thus far show that the finer or multi-filament rayons have a greater breaking strength per denier than those made up of the regular coarse filaments, while the strength is about the same under varying atmospheric conditions. The cuprammonium type of yarn is an exception which does not show as much elongation.

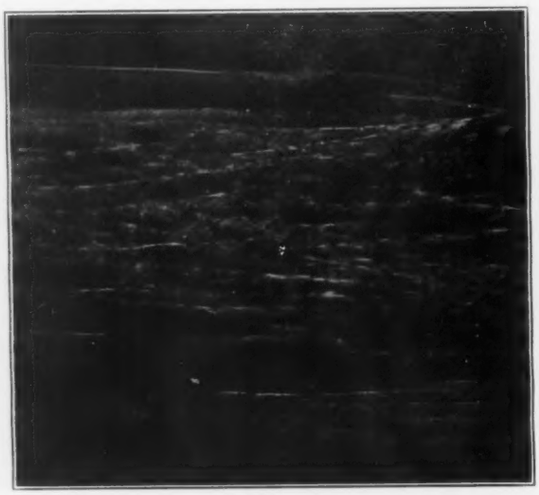

Fig. 1. 40-Filament Viscose (Hollow Filament)

Fig. 2. 112-Filament Cuprammonium

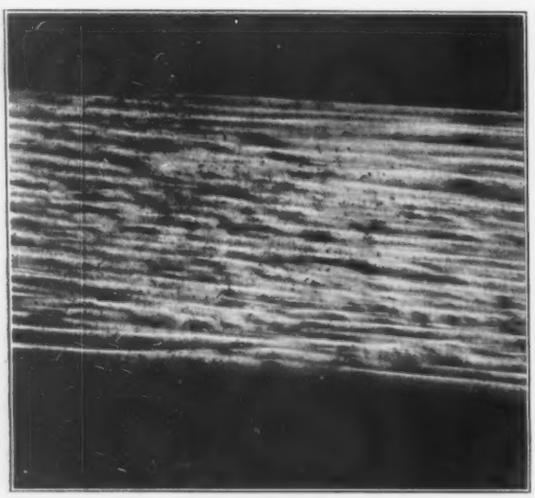

Fig. 3. 30-Filament Cuprammonium

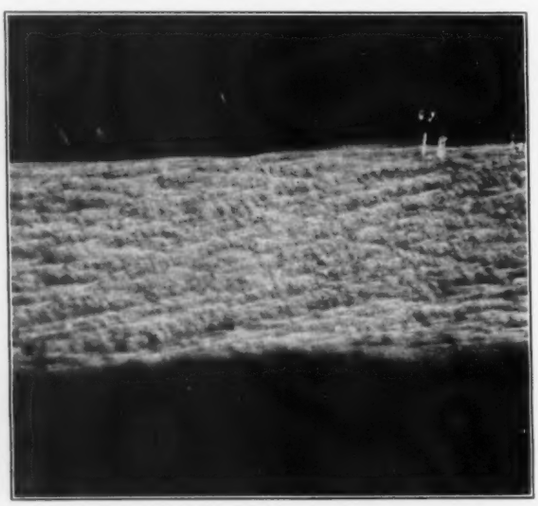

Fig. 4. 60-Filament Viscose

If the natural construction of the yarns is not suitable for plating, or the counts are about the same, then, as stated above, the position of the yarn in the needles must be controlled by tensions. This condition should be avoided as much as possible in knitting, regardless of what kind of yarn is being used—the more so with rayons and silks made up of fine filaments.

Taking the above information, the most of which has been determined in the testing laboratory, and using it as a guide to regulate conditions at the knitting machine, the following experiments were run on the ordinary type of automatic hosiery machine which is being used in the mills at the present time.

Experiments with Moisture

The rayon yarns were taken in their natural condition as received direct from the yarn manufacturers, were wound on a rayon bottle-bobbin winder, and were then placed on the hosiery machines. No oils or emulsions of any kind were used in these experiments. The atmospheric conditions were automatically controlled and a careful check taken at regular intervals of the temperature and humidity in the room. The only changes made were in the humidity and ten-

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Present Supremacy of $22.50 Suit Has Brought Much Readjustment to Clothing Market

Makes $35 Next Important Range and Little is Sold Above $50 — How Retailers Have Fared

By Frank E. Landau
Of the National Retail Clothier

THERE is no indication that the seasons in the immediate future are going to bring a change in the price ranges most in demand in men's clothing. Retailers apparently have reached a place of some stabilization of demand after the slow and steady downward movement that has gone on since 1921. Evidently the low point has been reached with the spread of the demand for the $22.50 suit, but retailers and manufacturers who make it their business to analyze price demands carefully feel that the $22.50 suit is near to its maximum of popularity. And, in spite of the growth of a chain selling clothing at $12.75, and the appearance of some outlets at $12.50, they do not believe that the popular demand is going to drop below $22.50. At the same time as the development of the $22.50 suit to its present great popularity, there has been a distinct upward tendency that makes the $35 suit, at retail, a very important feature.

Leadership at $22.50

The $22.50 suit at present is the biggest item in the men's clothing field, without any question. That is the price most in demand and the indications are that it will remain most in demand for several seasons at least. The period of expansion of the $22.50 chains has not ended, to the extent that towns that have no $22.50 stores are going to get them before very long. But there is a feeling that the period of expansion of the $22.50 chains in towns where such stores already exist, is over. Already the competition at this price is so keen that most of the stores are being forced to do business on a very close margin, with the few leaders making a satisfactory profit through great volume. With the others it is getting to be a case of dog eat dog. They are doing a big volume of business without getting a profit that is satisfactory or even necessary to their continuance in business.

This condition promises to curtail the increase of $22.50 stores in localities where they now are strong. On Sixth Avenue, just south of Thirty-second Street in New York City, for instance, there are seven stores featuring $22.50. Not all of them are exclusively $22.50 stores, but all of them feature that one price. Within a radius of a few blocks from Third Avenue and One Hundred and Twenty-fifth Street, in New York City, there are more than twenty $22.50 stores, all of them are catering to the same class of customer at exactly the same price.

This condition is not peculiar to New York City, or even to the larger cities. In many of the smaller cities there are three, four or five $22.50 stores within a block or two. And in addition, in most of the smaller places, the other retailers of men's clothing have gone into the business of competing with the $22.50 stores at that price or slightly under it.

If all men bought $22.50 suits there might be room for the great increase of stores featuring this price. But all men are not buying at this one price, and undoubtedly never will. There are no figures available, not even approximate figures, but leading retailers and manufacturers feel that the $22.50 business throughout the country does not run over 25% of the total clothing business, figured on the basis of units. And 25% is a high estimate, in the opinion of many.

Perhaps Overexpansion at $22.50

It is possible, of course, that this percentage may increase, but there is no likelihood that it is going to increase rapidly, and there is strong feeling that it is not going to increase materially. Up to this time the increase in stores selling at $22.50 has been greater than the increase of potential customers, because the $22.50 store is new. Some of the heads of the low-price chains frankly express the opinion that the $22.50 stores have grown so rapidly in number that they have passed the point of saturation. While the leading chains may and probably will continue to expand by going into cities where they are not now represented, the mortality rate of the $22.50 stores that are not leaders promises to be heavy enough to prevent much increase in the number of stores.

While the expansion of the $22.50 stores has been at the expense of the other stores, in the sense that the business has come from potential buyers in the other stores, the $22.50 store has not replaced the higher priced store by any means. It simply has driven the old-line store to adopt one of two courses. Either it has actively competed for the $22.50 business by installing a $22.50 or $21.50 department and keeping its higher priced merchandise, or it has ignored the low priced demand entirely, featuring merchandise at $35 and up. The old $30 price remains, but in greatly curtailed quantity. It is too close to $22.50, and to the value that the $22.50 stores are giving, to have much chance for volume. For the most part the rise of the $22.50 business has cleaned out everything between that price and $35. There still is some business outside of the big cities at $25, with two pairs of trousers, but this is small and apparently it is melting away under the $22.50 competition. In New York City, and some of the other large cities, there is some play on $28, in some cases as a feature price—such as the low range put out by Hart, Schaffner & Marx—but this price is not regarded as especially important. For the most part price is $22.50 or $35, and these two prices make up the bulk of the demand to-day, and will continue to make up the bulk for the immediate future at least.

Direct Clothiers' Outlets

Retailers who are competing by installing their own $22.50 or $21.50 departments are finding that they are at a great disadvantage. They cannot offer anything like the selection that is being offered by the $22.50 store. And they find it hard to offer equal values with the $22.50 store because they buy in small lots against the other man's quantity buying. But beyond this disadvantage of small buying against quantity buying there is another handicap for the average store that fights the $22.50 store at its own price—very many of the $22.50 stores are direct outlets for manufacturers, owned outright by manufacturers under their own name or some camouflage name.

This method of fighting the newcomer with his own weapons has proved expensive for most retaliers who have tried it. So the generally used plan now is to leave the $22.50 store and the $22.50 business severely alone, climbing out of that class of competition by featuring the higher ranges, especially $35, which is the second biggest price. Under this plan the $22.50 store has little effect on the other store, and there are any number of instances in which a customer is sent from one store to the other to get the quality of suit he wants to buy. This has had the effect of making $35 a very important price, and it is the reason for the partial elimination of the prices between $22.50 and $35.

A Boost for the $35 Suit

Here is an instance of the way the plan works out, in its effect on price ranges, and it is just one example out of dozens that have come to light since the rise of the $22.50 suit. A retailer just outside the Herald Square district in New York City, in business for many years and doing a good part of his business at $30 and $35, and a fair amount at $25, found one day that he had a $22.50 store next door to him. He thought he saw ruin staring him in the face unless he competed successfully at the new low price. So he filled his windows with merchandise ranging from $21.50 to $25. He had comparatively few suits at those prices, for most of his business was done at higher prices, and the other man had a store full. He dropped his $25 line to $22.50 but the margin was too small to give him a decent profit. He could not compete successfully with the other man on the low range merchandise, and he was losing some of his better price business because he was using his windows for the other clothing.

Then he decided he was going to run his own business in his own way, and let the other man run his own business. He threw out the low range clothing, and featured $35 and $45 merchandise in his windows. It looked very good in contrast with the $22.50 windows next door to him, and business began to come back. Now, with a $22.50 store on each side of him, and three in the same block on the other side of the street, his business is going along nicely. He is selling much more $35 merchandise than he ever did, but not as much clothing above $50 as he did. The principal effect of the $22.50 business on this man is that it has created more price resistance than he felt before, but he can overcome that. If a prospect insists that he wants a suit lower than $35 he is referred next door, and the $22.50 stores send him some customers.

Everywhere throughout the country the same thing has gone on. Retailers, finding that they cannot compete successfully with the $22.50 store are withdrawing from competition. That is the reason for the sharp demarkation in popular prices, for the establishment of $22.50 and $35 as the two big-selling prices.

The popularity of the $35 price, under these conditions, is one sure indication that the whole country is not going to buy $22.50 suits. The fact that $35 runs a good second to $22.50 as a selling price, with every indication that it will maintain its strength, if not increase it, in the next few seasons, shows that too much stress must not be placed on the low end. There has been a disposition in the industry, from woolen and worsted manufacturers to retailers, toward $22.50 hysteria. In all probability the $22.50 suit is here to stay, filling something of the same situation as the $15 suit of pre-war days without quite reaching the same standard of

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It's Time to Call the Doctor—Hope for the Piece Goods Patient

Renaissance of Home Sewing as an Art of Importance to Textile Trade

By Hubert M. Greist
Executive Secretary, National Costume Art Association

THOSE "next of kin" to the piece goods business are awakening to the grave realization that it is time to call the doctor.

The patient is suffering from something more serious than a mere indisposition. It is a very sick patient. There must be a thorough diagnosis first, with scientific treatment and careful nursing to follow.

The diagnosis has been under way and has arrived at pertinent and practical conclusions, which point to a method of relief and, it is believed, to permanent restoration to healthy activity.

During the year just past, a group of merchants, manufacturers, and educators earnestly concerned in finding a way to re-vitalize piece goods, organized themselves into a working force, designated as the National Costume Art Association.

Research, analysis and a definite plan for action were the result.

The Bureau of Costume Art of the National Retail Dry Goods Association was an outgrowth and is a most important expression of cooperation by hundreds of retail merchants.

What Is the Complaint?

The diagnosis revealed that the complaint is not, "What's the matter with piece goods?" but, "What's the matter with sewing?"

One indication of what's wrong with sewing is found in the following facts and circumstances:

Some ten or fifteen years ago, we unconsciously delegated the teaching of sewing to the schools.

It is one of our failings to thus shift the parental duties one by one to the school's shoulders. But for some reason we have not set up any means of measuring and bringing to light the progress of our daughters in sewing under the school's tutelage.

Let us compare the teaching of arithmetic for instance and sewing in this matter of checks and balances as well as what we might call the publicity given to the pupil's progress or lack of it.

As to the former, definite standards of progress have long since been set for each school grade and in many cases "Regents' examinations" or other tests of state origin are given periodically as a means of measuring the performance of both pupil and teacher. Furthermore, it is generally true that the work of one teacher is checked by the next as the child moves up to a new teacher in each grade.

But in sewing and dressmaking the school girl is under substantially no such discipline or systematic surveillance.

Failure to do good work is not considered against her when time for promotion comes and in only a small proportion of our school systems is she required to prove by examination (as in other subjects) that she has learned her lessons and is ready to go on.

Furthermore, in most instances the teacher of sewing has all the grades in a given school and is accordingly not answerable to anyone who has occasion to show up or complain of her failure to do her work thoroughly and efficiently, or who is greatly interested in her problems.

Hubert M. Greist

This is obviously all wrong. If sewing should be taught at all it should be taught thoroughly and systematically and with definite requirements and discipline as to progress. And unlike arithmetic and other subjects which are purely mental there should be home work, for a reasonable amount of hand work is badly needed by the average student as a normalizing balance to brain work. In fact such hand work at home is beneficial in several ways and injurious in none.

It is furthermore obvious that the school has neither the time nor the equipment to provide for the sewing practice without which what the Germans call Fingerfertigkeit or skill, cannot be acquired.

In fact our teaching of sewing for years has been on about the same basis of efficiency as the teaching of piano would be if we had our daughters take weekly lessons at school but never practice and never play for any one or otherwise give concrete evidence of their progress. No wonder the piece goods business has suffered.

Improve Sewing Situation

With that as a starting point, the National Costume Art Association and the Costume Art Bureau have set out to improve the sewing situation. Many other factors related to the interests and activities of the average American woman of today indicate that the time is ripe for a renaissance of home sewing.

The all prevailing reign of "style", popularly associated with ready-to-wear in all its ramifications of grades, prices and promotion, promises to be the very instrument for directing women of moderate means to the piece goods counters. Through educational forces which have found their way into the every day life of the woman of average contacts and interests, there has been developed a consciousness which is style's best ally—good taste. With good taste comes a desire for individual expression, a more critical discrimination in those things with which a woman surrounds herself, including and most particularly, her clothes.

Housewife's Objectives in Sewing

The future of home dressmaking is assured, say leading authorities in the fields of education and home economics, because it enables women of moderate means to obtain four things in combination which they cannot secure in any other way.

Individuality is the first of these and that means dresses that have an intrinsic style worth of their own instead of being popular priced ready-made counterfeits of the more accredited exemplars of the mode.

Smart distinctive styles and fabrics, interpreted in the exact lines, colors and textures which best suit their particular types and tastes—those are the elements these women are seeking. This desire exists, latent or manifest, universally.

Quality, the second factor includes not only good materials but good workmanship, painstaking attention in the making to the little details that count so much in a finished appearance. The woman of refined taste has an innate feeling for sincerity in her clothes expression. She prefers, if she is limited in her expenditures, to buy a good grade of piece goods and the corresponding good trimmings, findings and accessories and to fashion them into a costume, that will bear her own critical scrutiny and that of her friends.

The third consideration is a *better fit.* Skimpy dresses, often shapeless at points when fit and line should be assured are not for her. There is the woman of large stature, moreover, as well as the one of angular form. Both of these types require for their comfort and attractive appearance just such special fittings as can be secured through home dressmaking.

Economy, the fourth point is with the average woman a major objective when purchasing wearing apparel. A recent and very extensive government survey disclosed the fact that 90 per cent of all women who sew at home, sew to save. Couple this with the fact that over 85 per cent of the families of the United States have incomes of less than $2500 a year and the enormous scope of the potential field for piece goods becomes apparent. Stimulation of the creative spirit in women, to the extent that they may become interested in the making of attractive and becoming dresses and enjoy doing so, will go a long way toward a revival of the art of home sewing and will contribute immeasurably to the betterment of the piece goods business.

There is a peculiar kind of satisfaction derived through wearing a new garment. A woman needs to experience this psychological reaction somewhat frequently in order to insure her happiness and create a sound and happy family atmosphere. Her clothing budget may not make this possible unless she does some home dressmaking. She has the added satisfaction of having created an object of art as truly as though she had painted a picture. We have all noted the justifiable pride with which a woman will say, "I am glad you like it. I made it myself."

There is in present day dressmaking, little or none of the drudgery which our grandmothers knew. And yet, it is a mistake to think that all has been done that can be done to improve and simplify the technique and the teaching of home sewing. The National Costume Art Movement now well under way, representing as it does the first great cooperative effort of those most vitally interested, is sure to produce innovations as important as the electric sewing machine which is now going into millions of homes and these inevitable improvements may even measure up to the device just mentioned in still further lessening the time, skill and effort required to make dresses of individuality and quality at low cost.

Want More Home Sewing

The future of home sewing seems

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Thoughts on Products, Mill Equipment, and Methods For the Cotton Manufacturer of 1928

New Owners Take Over Old Mills And Make What the Public Wants

By Charles M. Mumford
Engineer, Lockwood, Greene & Co., Inc.

THE new year will be no different from recent unprofitable years for the mill that is in a rut as regards its products and plant methods. There will be no profit in making goods just because the mill is accustomed to make them. The velvet will go to the mill that makes what the trade is asking for. Mills that continue to bleed the plant and neglect to feed it new methods and equipment will also find 1928 an unsatisfactory year, and many of these companies will pass out of the picture, as others of this type have done.

THE age in which we are living calls for entirely different conditions in all lines from those existing even a few years ago. We are all living at a higher level and require much more in the way of necessities, or what are now supposed to be necessities, and extravagances. This is shown in our homes which are now well equipped with labor- and time-saving appliances.

The change is perhaps most noticeable in the matter of dress, including the goods from which clothes are made and the style. I remember, when a boy, that in making up the Christmas list there was always one item of calico cloth for dresses for the maid, and she was always pleased to receive it. Every spring a cut of cotton cloth was purchased, usually one of the old well-known brands, and with the aid of a seamstress all of the ladies would pitch in and make up full sets of underclothes for the coming year. About this same time cloth for summer wear was purchased, and the seamstress was kept busy for some time. This dressmaking habit was almost as great a nightmare as was the annual house-cleaning party. The man of the household might find a chair to sit in on his return at night, but it probably would not be in its accustomed place.

These customs in regard to clothing have practically disappeared and in their stead the lady will make a few trips to the stores and purchase all of her outfit, in finished form, ready to wear. And only a small part of this outfit will be entirely of cotton. It is perhaps well that these changes have taken place, as the present methods and styles, excepting of course the extremes, are much more comfortable, more healthful, and surely require much less nervous energy.

No Market for Old-Time Cloths

A working girl, as known in former days, and not very far back at that, could easily be picked out on the street as her clothes usually had a worn appearance and were far from the latest style. Most of those working in a mill would wear a shawl over their cotton dresses and they felt that their job was such that they could not dress better. Working in a mill kept them at a lower level than those in other employment. Today, however, the average working girl is dressed in the latest clothes, and even furs, made according to the latest styles. The mill job pays them good wages and they are well satisfied with it as long as they can dress and look as well on the street as their friends who have office jobs. In many cases their weekly wages are higher.

All of this simply goes to show that the mills of today cannot go on turning off the old-time cloth and expect to sell it, as there is little call for it now. They must adapt themselves to the new conditions. The most foresighted ones are the ones that will continue in business, while the others will have to shut down, as they have been doing for some time past.

New Owners Successful

When a mill closes because there is no demand for its goods, how is it that some other other company will come along, purchase the plant and start it up? The answer is that they see a chance to acquire a good piece of property at a low price and have in mind utilizing it to manufacture a line of goods, probably quite different from those formerly made, for which the trade is calling. Why is it that the original company could not do the same thing? Is it not that they have tried to force the trade to buy the goods they are accustomed to make, rather than to make the necessary changes in their plant to make what the trade is asking for?

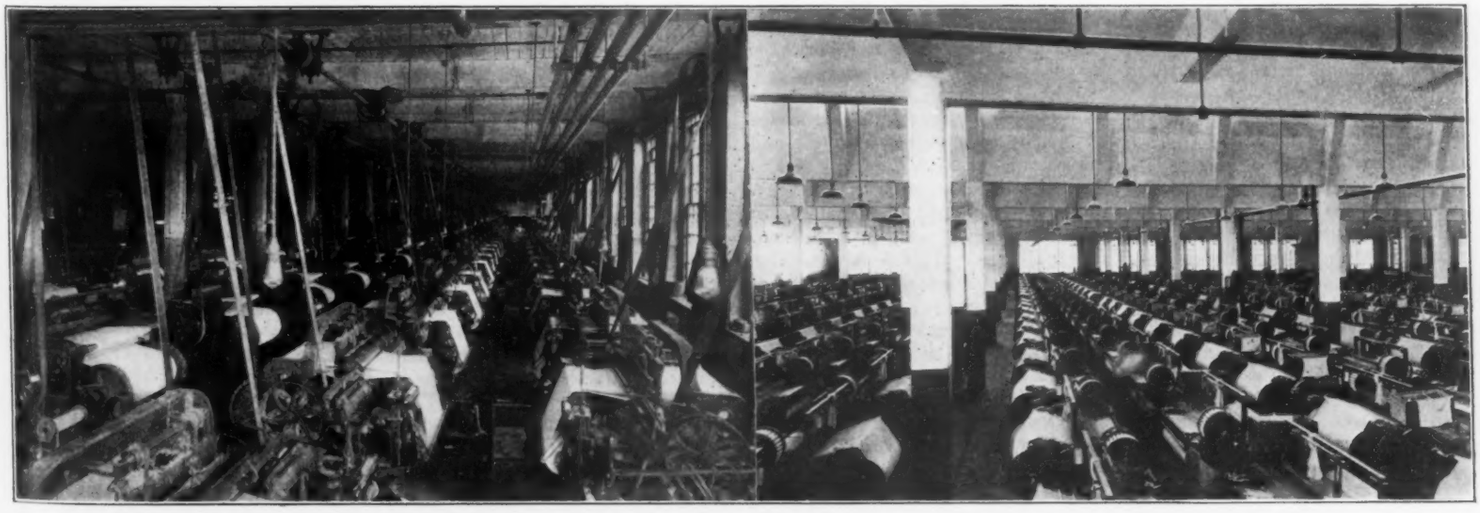
Our country has been in the habit of copying fabrics made in other countries. As soon as a few mills get started on these and it is seen that they are making a profit, others try to copy with the result that soon the market is flooded and there is no market. The mills that are the first to start on a new style and then are among the first to stop making it, are the ones that make the profit. The followers may make money for a short time but generally find they have a lot of goods on their hands that cannot be sold, as all call for these goods has stopped.

Although this is a period of style, there are many standard fabrics, called for continually, that show a good profit for the mills that are set up to make them, and it is far better for a mill to run on these rather than to be changing continually in order to meet the demand for some of the so-called novelties. It is not necessary to mention any names, but if the reader will think for a moment he can probably recall many mills, balanced on some staple fabric, which run continually on one line of goods and are not led away from this line by the possibility of larger profits in some other line. These larger profits usually fade away very rapidly.

Replacing Obsolete Equipment

The successful mill is the one that keeps its plant and equipment in first-class order, not only as to cleanliness, but also in regard to replacing obsolete equipment. It has often been said that there have been no radical changes in textile machinery since the perfecting of the automatic loom. This may be true of the processes themselves, but there have been many refinements brought out in connec-

(*Continued on page* 153)



A Contrast in Cotton Weave Rooms Showing How Mill Construction and Equipment Have Advanced

Reduction of Manufacturing Costs by Labor Extension Methods Based on a Mill Survey

Knowledge of Variables and Careful Preparation Before Change Are Necessary — Examples of Actual Savings

By Sidney S. Paine

President, Textile Development Co., Boston

DURING the last few years considerable attention has been paid to labor extension, which means making labor go further in mill operations. As a result of the work of men like Sidney S. Paine, mills have increased the machinery and output per operative 100%, 200%, or even more. Such results have been secured by surveying mills to determine all influences that govern a machine or job in order to do away with unnecessary work and needless difficulties. It should not be assumed that the extended labor program means that operatives do more work; they may actually perform less work while tending more machines and earning larger profits for their employers.

WITH some exceptions, cotton mill executives have not enjoyed the last few years. The differentials between selling prices and costs have either been comparatively small or in the wrong direction. Many things have been blamed, the most notable of which were the market, labor, taxes, legal restriction of hours, changes of fashions in women clothes, sales methods, and luck.

The difficulties were met in a variety of ways. A few managers gave up the ghost without much of a struggle. Some Northern executives moved their machinery to the South; some men had the courage of their convictions and bought large supplies of cotton for future use when the price was low; and many men set out to make an earnest and systematic study of manufacturing costs and methods, so that they might reduce these costs to a reasonable minimum

It is with one part only of this constructive movement in the reduction of manufacturing costs that this paper will deal. Considerable progress has been made in cost methods, elimination of waste, both in material and labor, larger productions, better quality cloth, and in many other directions. We shall consider here, however, the single phase of the extension of labor.

From 24 to 88 Looms Per Weaver

A few illustrations that are typical of many mills, will introduce the subject. To make the question less cumbersome, I have given illustrations from weave rooms only. Labor arrangement has been studied with equal care in the other departments, although the savings possibly are generally not as large as in the weave rooms.

Mill "A"—Print Cloths

The manufacturing cost was prohibitive. A survey was made, and several months were spent in a period of preparation. A year later the labor cost was 4½c lower. In the weave room the weavers earned about 12% more money (after the changes), and in spite of the fact that they ran 84 looms with the help of a battery hand, instead of 24 looms, said that they did not work as hard.

Mill "B"—Print Cloths

The weavers ran from 24 to 28 looms. After the survey and period of preparation the weavers ran 80 to 88 looms (with a battery hand), earning about 10% more money, and had more rest time. (Incidentally, a neighboring mill attempted to change from 24 to 28 looms without a survey or period of preparation and failed.)

Mill "C"—Coarse Goods

The weavers were running 20 looms, and the labor turnover was enormous, as the labor situation was very bad. After a survey and a year of preparation, the weavers average 71 looms and the labor turnover was a small fraction of what it formerly was.

Mill "D"—Fine Goods

The mill has had a survey, is now in the period of preparation, and by the same method used in the other mills expects to cut the labor cost over 4c per pound, and at the same time pay higher wages.

Survey Prepares Way for Changes

By a survey, I mean a thorough detailed examination of the manufacturing end of the mill by a group of practical men (old overseers)with analytical training, who have become specialists in their several departments. I do not mean any "short cut" method. The complete picture of the needs and possibilities of the mill are given, the order of procedure is outlined, and standards in all major items are laid down. The survey group withdraws while the mill goes through its period of preparation, but returns to the mill periodically to check progress and to render what further service it can. When the standards of operation are reached, the mill makes its extension, and not before. This is done with or without the assistance of the survey group, as the mill desires.

The mills referred to above are typical of many mills that have reduced their manufacturing costs very considerably by this systematic study of manufacturing conditions. This type of work has been and is being done in mills making all classes of fabrics—fine, medium, and coarse. Where the work has been laid out scientifically on a practical basis, and where the mill has reached the standards of machine performance before any effort is made to extend weavers, spinners, or any other help, the results have been satisfactory to the managements and to the help.

Many mill officials have asked why the survey is necessary. "Our superintendent and overseers are of the best and do not need outside assistance," they say. The main answer is this: The average first-class mill official makes a correction in a mill because he believes it right. The survey makes a recommendation because it has definite objectives of lower costs, and knows that the correction will either directly or indirectly help reach the goal.

Then again, there are the considerations of the experience in many mills; allowing the survey group to function as a clearing house; the detached viewpoint and the specialization training as analysts. There is the same basis of getting a complete story before making any premature moves, that at first glance might seem wise, and which a complete study would subsequently show to be unwise. Before laying the foundation for a house, the plans are drawn.

Information for Management

What are the objects of this survey? As I see them they are as follows:

(1) To indicate methods and detailed corrections that will make the work run so well that it will be possible to

(a) Reduce the cost by having each operative handle a larger production.

(b) Pay good wages to the help.

(2) To lay reasonable standards of mill performance with the object of

(a) High production.

(b) High quality.

(c) A practical measurement of tasks so that under the "extended system" no hand will be overworked, but that all will do full jobs.

(d) That unnecessary work, such as high end breakages, be eliminated.

(3.) To lay out a system of continual checking so that standards may be maintained.

(4) To establish system of investigation so that the mill officials will continue to measure fundamentals systematically after the standards of the survey have been reached.

Let us go back to what happened in Mill "A." The survey organization went into examine the conditions and find a way to reduce the manufacturing costs. A man went into each department and examined the physical condition of the machines, the fixing and setting. The organizations of draft, speed, and twist were checked up, and the cotton blending, humidity, and all other major items of manufacturing were looked into. At the same time, in each department end breakage tests or loom stoppage tests were run. These tests measured not only the amount, but the causes of the difficulties. These should check with the machine observations.

Analysis of Loom Stops

To illustrate this, one weave room was running on 64x60, 5.35-yard prints. The survey had set a standard of 0.5 stops per loom per hour. The loom stoppage tests showed that the loom stoppage averaged about 1.5 stops per loom per hour. In other words, the mill was asking the weaver to piece up and start the loom about three times as often as it should. It asked the weaver (on 24 looms) to piece up an end and start looms 360 times in ten hours, beside filling the batteries. This gained nothing either for the mill or the weaver.

The loom stoppage tests further showed the following causes, the figures indicating stops per loom per hour:

Weak ends	—	.56
Lint and bunches	—	.29
Knots	—	.25
Kinks	—	.15
Tie backs	—	.14
Ends coming up	—	
Wild yarn	—	
Crossed ends	—	.05
Wrong draw	—	.02
Mechanical	—	.10
Total	—	1.56

The task became one of finding out

the reason "why" of the above causes and the remedies.

Finding the Reason Why

But 0.10 stops out of 1.56 could be placed directly on the weave room, and that from mechanical causes. The weavers were undoubtedly responsible for some of the wrong draws, crossed ends, wild yarn, and lint, and the stops for weak yarn were unquestionably exaggerated by certain conditions of the looms, but these possibilities were shared by other departments. Therefore, the looms were gone over, weavers and fixers instructed, and check systems installed.

The drawing-in department shared attention for crossed ends and wrong draws. The warpers and slashers contributed the tie backs, ends coming up, some of the wild yarn, and some of the kinks. The spinning room contributed slightly to kinks when occasionally the frames were stopped as the rails went up. The spoolers also contributed.

Knots were reduced very much by a systematic sharpening of the blades and bill springs, oiling and inspection of the knotters.

Lint and bunches were put in all departments by very poor cleaning and oiling.

To reduce the weak yarn stops required an intensive effort all along the line, starting with the blending of the cotton and proper classing. Many machine corrections were needed. Probably the greatest contribution was the study to retain yarn elastically on the spoolers, warpers, and slashers. In the latter machine the stretch was over 4%. One big influence was the establishment of a proper lay on the speeders, so that an even and slack tension could be used throughout the doff.

More Machines, Less Work

I have outlined the high spots only. This study required an intensive study by the survey, and several months' work by the mill, checked from time to time by members of the survey group. Loom stoppage tests were run to measure the progress made. The average of the tests for a considerable time finally showed an average of 0.40 stops per loom per hour, made up as follows:

Weak ends.....	— .19
Lint and bunches.	— .12
Knots	— .03
Tie backs.....	— .02
Ends coming up.	
Wild yarn.....	
Mechanical	— .04
Total	— .40

On this basis, a weaver on 84 looms had to piece up 336 ends in ten hours, against 360 on the old basis.

Weavers' cycles were laid out, walking time taken, and the time to piece ends and start the loom was measured. All battery filling was taken away from the weavers. The extra walking time required was very much less than the time formerly required to fill batteries.

Therefore, it is fair to say that the weaver's work was easier on 84 looms than on 24 looms. She received about 12% more money, and the mill reduced its labor cost. I feel it is correct to say that the survey, with its detailed analysis of conditions and laying out and checking the several corrections that were made during the period of preparation, made possible a sane, practical extension of weavers that would have been indeed difficult without it.

The survey further studied the job of the battery hand, increasing the life of the filling bobbin in the shuttle over a minute, and laying out her job so that she could tend as many batteries as the weaver did looms. The fixer was put onto the same number of looms. In other words, the weave room was divided into blocks of 84 looms, each block having one fixer, one weaver, and one battery hand, all of whom were paid on a piecework basis. The results were higher efficiencies, fewer seconds, and a much lower cost.

I might go on to speak of work that was done in the other departments along the same lines, until the labor cost was 4½c lower than the previous level. The mill, before this work was begun, was a good mill according to old standards. But the standards of yesterday are not the standards of today. The mill is today a good mill according to the new standards.

Methods for Different Products

The applications of extended weaving, or spinning, or of any other job, do not follow along the same lines with different fabrics. To continue with weaving, we have cross weaving, back weaving, and front weaving. The requirements of each fabric determine the attention that is required by cloth inspection, and how much can be spent in actual operation. The picks per inch or rapidity of the weave also contribute to the decision. I have in mind one mill running 115 looms to the weaver, and another with 18 looms per weaver, and both are doing all that could be reasonably expected.

I have seen some mills in which the greatest economy can be effected by the retention of the older system of weaving, where the weaver fills her own batteries, and I have seen other mills where a decidedly different system is very much more economical. In other words, each fabric has requirements that must be measured accurately before the task of the operative is defined.

As a result of several years of observation in many mills, I have come very definitely to the following conclusions:

(1) That before any real undertaking is begun, it is a paying proposition to know the complete story before taking any steps, in order that the work may be done most economically and effectively.

(2) That a survey of a cotton mill to determine all influences that govern a certain machine or job is absolutely necessary in order to do away with unnecessary work and needless difficulties.

(3) That when labor extension is undertaken scientifically and fairly, the job of the operative is easier, more pleasant, and can deserve higher wages.

(4) That from the above, the task is not really one of "extended labor", but should be defined more accurately as *"extended management."*

Thoughts for 1928 Manufacturer

(*Continued from page* 151)

tion with the machines which should be carefully looked into and adopted in many mills.

Many improvements have been made in the picking machinery, with the result that now a lower grade cotton can be used. It can be opened, cleaned and delivered to the card in a much better condition than ever before. It will be worth your while to have your picker room looked over to see if some of these improvements will not be of good service to you.

No radical changes have been made in the carding, drawing or roving departments, but the machines as built today are far ahead of those built in years past. Their castings are true; boring of holes is done by jig, thus insuring their being interchangeable. Designs are such as can be easily cleaned, and machines are so built that the lint will be thrown off rather than collected on the frame. Ball or roller bearings are now furnished in many cases, which not only make a lighter running machine but do away, in a large measure, with the necessity of constant oiling and thus remove the cause for oily and stained sliver and roving.

The method of spinning on a ring frame has not been changed, but what a change has been made in the running of the frame due to ball or roller bearings, stiffer cylinders, tape in place of band drive, as well as refinements in many of the smaller, but very vital parts. A very radical change has also been started in this department by the introduction of "long draft." Reports from many mills using this system show better, stronger and evener yarn, and the production costs are greatly decreased. Some of the roving processes are omitted, with the result that the space formerly used by them is released for either storage or possibly an increase in the number of spinning spindles. It also means a saving in heat, light and power, and therefore is something that it would be well for many of our mills to consider seriously.

Making Better Warps

The spooling and warping departments are now receiving careful consideration and the introduction of the automatic spooler and high speed warper is showing large savings. Possibly these units would not be suitable for all plants on account of the size of mills and the great variety of goods made. However, the new type of high speed warpers and the introduction of winding processes in place of spooling should be looked into.

Great improvements have been made in the slashing department, not only in the construction and equipment of the machine itself, such as the introduction of roller bearings, positive drive, and insulated cylinders, but also in the handling of the size. Systems now installed insure a mixture that is always the same to all slashers, and also at a constant temperature. The old method of filling the vat from a pail and heating it by means of a steam pipe, both of which call for the "human element," is fast being done away with and the continuous method is taking its place. Many mills also are studying the question of the drying of the yarns and are finding that they are using too much steam at too high a pressure, and are therefore actually burning the yarn and size, thereby causing much trouble in the weave room. The yarn must have moisture in it to run properly in the loom, and yet not so much as to cause mildew. It is possible to ascertain this required amount and run your slasher accordingly, with automatic temperature controls.

The results obtained by the introduction of automatic looms are known to nearly all of us and therefore do not need discussion here. Manufacturers are building much better looms than ever before, and we now have perfect castings, accurate running gearing and, in many cases, roller or ball bearings. All of these tend to a smoother running machine and therefore much better cloth is made.

Study Improvements

It is not intended that this article should cover all improvements in cotton mill machinery, but it will serve to call the attention of the mill man to the fact that improvements have been and are being made in machines for all departments. A progressive mill man, therefore, should inventory his own plant to see whether these improvements have been incorporated. He should delegate someone, if he has not the time himself, to keep in touch with betterments in each of his several departments.

There is not only a chance of making savings in manufacturing costs by the introduction of new machinery and appliances in nearly all cotton mills, but also large savings can be made by the rearrangement of departments and the methods of moving the stock between departments, the driving of the machines, revamping the heating, lighting and humidifier systems, the distribution of labor or the "extended labor program," changes in the methods used for keeping the mill neat and clean, and many other items.

New England is not going to lose all of its cotton mills. The wide-awake, up-to-date organization is going to continue to operate and at a profit. Those companies, however, that continue to bleed the plant and neglect feeding it new methods and equipment are bound to pass out, as so many of this type have already done.

Researches and Studies of Technical Problems by Associations, Schools and Other Organizations

Many Developments of Unusual Value Although Little Accomplished That Could Be Called Research

INDIVIDUAL effort produced most of the important textile discoveries of the past. We have now reached the stage where trade associations, schools, government bureaus, and the organizations of laboratories are taking up textile studies and some types of research. Soon, we hope, special machinery will be created to deal with organized fundamental research. This article deals with the present stage in the development of textile research. It lists some of the things that various organizations are doing. We hope it will demonstrate to the industry that considerable effort is being expended on textile problems and will encourage others to support such work.

IT is not the purpose of this article to discuss the broad subject of textile research. The present writer, and others, have in the past pointed out in TEXTILE WORLD the need of some organized plan for the development of pure or fundamental research. While little of a definite nature has been accomplished along this line, some progress has been made, notably the survey of the Textile Research Council. Further results from their efforts will come later.

In the meantime an increasing number of studies and tests are being made from which the industry is deriving important benefits, and there is need of calling attention to them in order to stimulate interest in such work and hasten the initiation of the more important fundamental and applied technical research on an organized basis.

Recognizing the importance of broadcasting what is being done in the way of studies and tests, TEXTILE WORLD sent the following letter to a list of 40 associations and others known to be interested in improved textile technical practices:

"We are getting together a list of the accomplishments during 1927 in the way of researches and studies of textile materials and textile manufacturing problems by associations, schools, private organizations, and Government departments.

"This material will be printed in our Annual Review Number, and in addition to proving of value to the textile industry, will no doubt stimulate interest in researches and studies of textile subjects, so that more will be accomplished along this line in the coming year.

"Can you give me a list of any researches or studies that your organization has carried out during 1927? Any remarks as to the extent and value of these studies could be included if you care to send them, also a statement as to further work along this line that is planned."

The result of this incomplete investigation was 22 replies; a remarkable showing in view of the fact that nothing in the way of a follow-up was attempted. Of these replies 15 were from associations, 4 were from schools, two were from private laboratories, and one was from a Government department.

Southern Textile Association

The larger number of the studies on cotton manufacturing have been carried out in the South as a result of the activities of the Southern Textile Association and The Arkwrights, Inc. J. M. Gregg, secretary-treasurer of these organizations, writes as follows in regard to the work of the Southern Textile Association.

The people of the South feel that this association has been of the greatest aid in reducing cost of manufacturing and at the same time increasing quality and production. Among the studies that have been completed during the year are the following:

Causes of Cockled Yarn
Effect of Card Production on Yarn Strength
Machine Shop Organization
Power Variations and Costs
Standard Methods of Grading Print Cloth
Speeds in Spinning
Motors and Controls

The Arkwrights, Inc.

Much of the work sponsored by the Southern Textile Association was carried out by The Arkwrights, Inc., the affiliated research organization. A remarkable record of accomplishment was made by The Arkwrights, no less than 18 studies and tests being completed and approved. These include the following:

Difference in breaking strength with warp or combination wind on 30s warp, using one-inch American cotton.

End breakage and breaking strength in spinning by setting slubber, intermediate, and speeder rolls as follows: Staple of cotton plus 1/32 in., 1/16 in., 3/32 in., ⅛ in., 3/16 in. on 30s warp yarn.

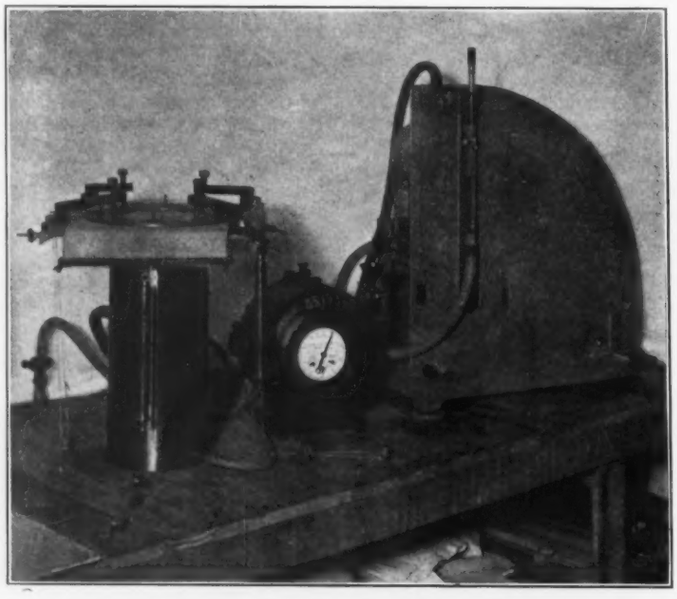
Comparative variation of twist in plied yarns on tape and band-driven twisters.

Comparison of results of warp, filling, and combination builds on spinning.

Results obtained from three or four processes of roving on combed 60s using 1⅛ in. cotton.

Determination of causes of uneven twist in two-ply yarns.

Test of No. 21 yarn made from various twists in roving for ends down per 100 spindles per hour and breaking strength.



Apparatus for Measuring Air Permeability of Textile Fabrics

Hosiery yarn made from one process and two processes of drawing and evenness compared by having them knitted into hosiery.

Comparison of results of 11 draft and 14 draft on 40/1 hosiery twist yarn using 1⅛ in. cotton.

Breaking strength of yarn before and after sizing; also percentage of added weight.

Comparative contraction of different styles of goods on the same loom and comparative percentage of contraction of the same styles of goods on different makes of looms and on looms having high and low take-up rolls.

Comparison of breaking strength and ends down per thousand spindles per hour from yarn made from a card producing 8, 12, and 16 lbs. per hour, using the same weight lap and same weight sliver and same cotton. Also take account of various weights of waste made under each system.

Percentage of different lengths of staple from one-inch cotton received from different localities.

Determination of gain or loss in tensile strength of cotton piece-goods due to various operations in a chlorine bleach.

Comparison of percentage of added weight from sizing as shown from desizing of samples of one style of goods taken from 10 different mills, and samples of another style of goods taken from 10 different mills.

Test of 30s yarn made from various twists in roving for ends down per 100 spindles per hour and breaking strength.

Comparison of breaking strength and variation in number from creeling drawing frames all at one time against creeling as each can becomes empty.

As The Arkwrights have approximately 50 other tests under way, the record for last year may easily be surpassed in 1928.

National Asso. of Cotton Mfrs.

Although busily engaged during the last year on tax problems of mills, the National Association of Cotton Manufacturers found opportunity to do more in the way of technical investigations than has been done in previous years. Among the studies carried to a conclusion or on which notable work was done are the following:

Effect of Temperature and Moisture on Rayons
Causes of Imperfections in Rayon Fabrics
Effect of Various Types of Finishing on Gray Cloth Constructions
Fabric Construction Curves to Determine Fabric Weight from Known Yarns
Effect of Twist on Single and Ply Yarn Strength
Effect on Rate of Drying of Various Finishes.
Shrinkage of Sheets in Laundering

Hosiery and Underwear Mfrs.

Standardization and research work

completed by the National Association of Hosiery & Underwear Manufacturers' research associate at the Bureau of Standards during the last year included the following problems: Standard Per Cent of Oil on Rayon Yarn for Use in Knitting; Standard Lengths of ⅞ Children's Hosiery. The following problems are in progress and they hope to complete the first of these during the present year: Standard Lengths for ⅝ Children's Hosiery and Boys' Golf Hosiery; Standard Specification for a Lubricant to Be Used on Machines in the Manufacture of Hosiery and Underwear.

The greater part of the time of the associateship is spent on individual research problems, problems which turn up from day to day in the course of manufacturing hosiery and underwear. These cover every phase of manufacture including the processing of rayon yarns, wool and worsted, silk, and cotton yarns. Over 350 research problems were completed from January 1 to December 1, 1927.

Asso. Knit Underwear Mfrs.

The Associated Knit Underwear Manufacturers of America research associate, at the U. S. Bureau of Standards, developed standard measurements for knit underwear. Those developed and adopted in 1927 are: Boys' Ribbed (1 x 1) Cotton Two-Piece Underwear; Boys' Flat Knit Cotton Two-Piece Underwear; Boys' Flat Knit Wool and Wool-Cotton, Two-Piece Underwear; Infants' Bands and Shirts; Children's Sleeping Garments; and Men's Ribbed and Flat-Knit Athletic Shirts (Pullover shirts). Other standard measurements are in process of development.

Knitted Outerwear Association

The National Knitted Outerwear Association has continued its established technical research, obtaining technical analyses and reports on individual problems of members as submitted, in cooperation with the United States Bureau of Standards. They have also initiated a survey or market study, following their sweater week effort, the results of which will not be known for two or three months.

Silk Association of America

To increase the quantity and improve the quality of raw silk, and to encourage the adoption of a standard classification for buying and selling raw silk, the following research work has been continued by The Silk Association of America, Inc.:

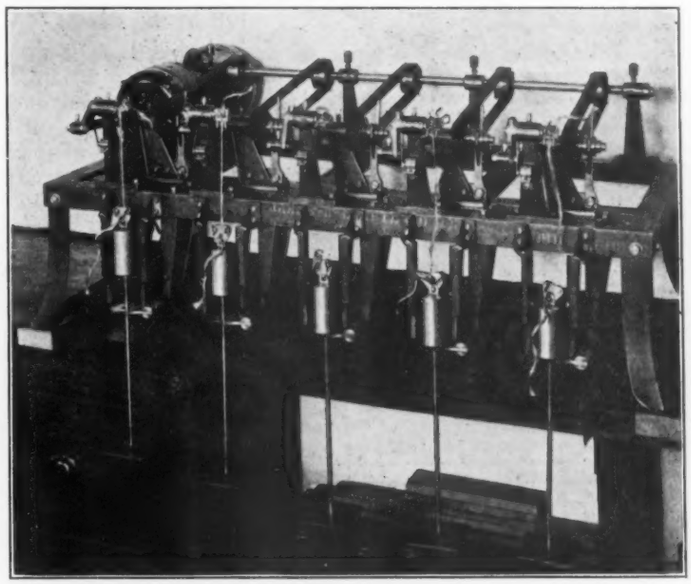
Demonstrating to silk producers of the Far East in laboratories, filatures, and schools the necessity for providing better facilities for reeling silk and for producing healthy, disease-free eggs in order that the quality of silk produced may more satisfactorily meet the needs of American silk mills. This work is being done with the encouragement and financial support of members of the Silk Association.

Studies through several agencies in China of the diseases of the silkworm (*Bombax Mori*) and of the mulberry tree.

The publication by the Raw Silk Classification Committee, which has been studying raw silk problems for some time, of a second report concerned primarily with classification of raw silk. This report suggests standards for the grading of raw silk which are determined by mechanical tests as well as the physical grading customary in the past. By means of such standards transactions between buyers and sellers are facilitated.

The preparation for use in the trade of a set of photographs indicating standards for evenness, cleanness, and neatness of raw silk to determine in advance of use the characteristics which will affect the quality and service of the finished product.

Much statistical work has also been carried on by the Silk Association of America, as well as activities looking toward the standardization of trade practices, among the latter being the publication of a cost accounting manual for throwsters which has been in the process of compilation for the past two years; the compilation of an outline for drawing up specifications for government bids; and the adoption of a standard test for determining by manufacturers that a dyed silk fabric is washfast, and the adoption of a uniform washing procedure for household use on washfast dyed silk fabrics.



Apparatus Used for Measuring the Resistance of Rope Yarns to Bending Fatigue

Silk Dyers' Association

The Silk Dyers' Association of America concentrated its efforts during 1927 on the publication of their "History of the Silk Dyeing Industry in the United States," a valuable work which will serve as a guide to further progress.

Work of Committee D-13

During 1927, Committee D-13, the textile division of the American Society for Testing Materials, in addition to its usual work on standardization of tests, test methods, and specifications, has undertaken in a small way some work that is research of a higher order than the statistical researches required in the ordinary run of standardization. This work is, however, an outgrowth of attempts to make more determinate standards than could be made from available data.

A research to establish a working relation between the variation in the twists used in making tire cords and the elongation under tensile stress has been carried far enough to warrant expectation of a definite report at the March meeting of Committee D-13.

A research to determine a working relation of the strength and stretch of knitted fabrics by a test break made on the fabric by the pressure of a ball or plunger on a sample held in special clamping devices has been in process for more than a year. There are many variants to take into account in this investigation which may require more time than expected, but it is considered that enough has already been accomplished so that a tentative final report may be expected at the March meeting.

An investigation of the relation of strength and elongation of cotton fibers under tensile stress to their spinning qualities has been undertaken, but has not passed beyond the preliminary stages. An active program for 1928 has been outlined which should lead to more or less definite results.

Reports from Textile Schools

In the carding and spinning department of the New Bedford Textile School considerable work has been done in testing out special fibers and special cottons. They have also been making tests on the use of oil spray on the cotton at picking, trying out a number of different oils and noting their effect. This test is still going on. In the weaving department attention has been given to automatic bobbin-changing box looms with dobby multipliers using two cylinders. In the knitting department a number of tests have been made on the new Sase yarns in underwear, dress goods, and hosiery; also on Sase mixed with rayon, silk, cotton, and worsted. Tests on spun silk mixed with worsted in the spinning process have also been carried out. There have been in addition tests on the results of using different oils on rayon; the effect on regain; also the effect of humidity on rayon.

Calls made upon the Bradford Durfee Textile School, Fall River, Mass., for tests and analyses by mills, selling houses, and others, increased very materially during the last year and a large amount of such work was done by the school. Much of this work was in the line of investigations, such as tests made to determine what twist in a specified yarn gave the best break, the relation of the break of single yarn to the break of ply yarn made from the single, etc. Throughout the year the school has continued tests for the purpose of determining, if possible, any relation between the breaking strength of yarn and the breaking strength of cloth made from the yarn. At the present time, work is being started on somewhat extensive tests to determine the results produced by treating rayon yarn with varying amounts of oil.

The North Carolina State College Textile School has during the last year completed numerous tests and studies for mills, including the following: Best Methods of Producing Herringbone Twill Fabrics; Tests for Breaking Strength of Cotton and Wool Blankets; Finishing Chambray to Obtain a Better Finish; Suitability of Cotton for Mercerizing; Twist in Ply Yarns for Special Uses; Comparison of Strength and Quality of Different Samples of Knit Goods; Analysis of Indigo Paste to Find Per Cent of Indigotine; Allowable Percentage Variation in Indigo Paste; Causes of Cloudiness in Black Dyed Cloth; and Spinning Tests on Mexican Big Boll and Acala Cottons. Much other work of value to the mills was done and during the present school year they are planning a study of starches and sizes used in weaving mills.

As in the case of other schools, the Lowell Textile School carried out many useful studies for the industry. In addition there were investigations on numerous subjects, including the following: Relation between Various Characteristics of Commercial Knit Underwear Fabrics; A Study of the Effect of Changing the Speed of the Cylinder of a Card, Keeping the other Parts at a Constant Speed, on the Strength and Elongation of the Yarn; Relation between Yarn Strength and Fabric Strength; The Effect of High Temperature and Pressure on Dyeing; The Immunization of Cotton; Products Formed by the Coupling of Diazotized Aromatic Amines to the Flourescein Configuration; New Dyes Derived from Acenaphthene; An Investigation to Determine the Effect of Age upon the Strength of a Cotton Yarn; Development of a Device to Measure the Tension in a Yarn During Spinning; and an Investigation to Determine the Possibility of Using an Illuminometer to Distinguish be-

(*Continued on page* 325)

Relative Efficiency of Various Types of Cotton Opening And Cleaning Machinery

Tests Conducted under Mill Conditions On Machinery Arranged in a Given Order

By J. W. Cooper

Of F. P. Sheldon & Son, Engineers, Providence, R. I.

EXPERIMENTS were conducted under mill operating conditions to ascertain as nearly as possible the comparative efficiency of each machine used in a certain plant for cleaning raw cotton. Two samples of cotton were tested, each weighing 500 lbs., and both were taken from the same several bales grading from strict low middling to middling, 1 3/16 in. staple.

Machines Used

This stock was then passed through the following machines in this order in Test No. 2: (1) two bale breakers in tandem; (2) a 20-in., 3-blade beater; (3) a vertical or Crighton opener; (4) a horizontal cleaning machine in which the screen and cylinder revolve in opposite directions; (5) a breaker lapper consisting of a 40-in. Buckley and a 16-in. 2-blade beater; (6) a finisher lapper with 18-in. 2-blade beater; (7) and finally the cards.

In Test No. 1, the stock was passed through operations 1, 2, 3, 4, and 5 twice. That is, after going through 1, 2, 3, and 4 once, it was reworked through the same machines a second time, and was then passed through the breaker lapper and made into soft laps, after which these laps were torn up by hand and worked through the breaker lapper again. The difference, therefore, between Tests No. 1 and No. 2 lies between seven cleaning operations in Test No. 2 and twelve cleaning operations in Test No. 1. (Seven cleaning operations in one instance, and twelve in the other, counts the breaker lapper as two—one for the Buckley and one for the blade beater; the tandem bale breakers are not, of course, included as cleaning machines.)

The visible waste from each unit was carefully collected and was accurately weighed, and its distinguishing characteristics observed. The results are recorded in Tables I and II.

TABLE I

RESULTS OF TEST NO. 1.

600 Lbs. Raw Cotton. 12 Cleaning Operations

	Waste in Lbs.	Waste % of 500 Lbs.
20", 3-blade beater	3.75	.75
Vertical opener	6.25	1.25
Horizontal cleaning machine	3.25	.65
20", 3-blade beater	2.87	.57
Vertical opener	3.62	.72
Horizontal cleaning machine	1.00	.20
Total opening room	20.74	4.14
40" Buckley section	1.40	.28
2-blade, 16" beater	2.75	.55
40" Buckley section	1.00	.20
2-blade, 16" beater	2.25	.45
2-blade, 18" beater finisher	3.75	.75
	11.15	2.23
Total opening room	20.74	4.14
Total opening and picking	31.89	6.37
Cards — motes	2.19	.48
fly	2.92	.64
strips	23.44	5.13
	28.55	6.26

Card waste is based on 457 lbs. of finished laps fed to cards.

TABLE II

RESULTS OF TEST NO. 2.

500 Lbs. Raw Cotton. 7 Cleaning Operations.

	Waste in Lbs.	Waste % of 500 Lbs.
20", 3-blade beater	3.50	.70
Vertical opener	6.50	1.30
Horizontal cleaning machine	3.00	.60
Total opening room	13.00	2.60
40" Buckley section	2.00	.40
2-blade, 16" beater	3.40	.68
2-blade, 18" beater finisher	5.00	1.00
	10.40	2.08
Total opening room	13.00	2.60
Total opening and picking	23.40	4.68
Cards — motes	4.94	1.08
fly	4.71	1.03
strips	21.60	4.73
	31.25	6.84

Card waste based on 476.75 lbs. of finished laps fed to cards.

SUMMARY OF VISIBLE WASTE

	Test No. 1		Test No. 2	
	Lbs.	%	Lbs.	%
Opening room	20.74	4.14	13.0	2.60
Picker room	11.15	2.23	10.40	2.08
Cards	28.55	*5.76	31.25	*6.25
	60.44	12.08	54.65	10.93

* Based on 500 lbs. at opening room.

Efficiencies Found

If from the total waste in each test, we deduct the card strips, which are salable and reworkable, there remains in Test No. 1, 37 lbs. of, and in Test No. 2, 33 lbs. of waste of no value. However, the above figures as they stand are no indication of the efficiency of each unit as a machine for removing waste, because they have not been proportioned to the amount of waste itself. For example, assuming the last unusable waste was removed at the cards, then the first cleaning machine, the 20-in., 3-blade beater, which eliminated 3.75 lbs. of waste, has an efficiency of 10.13%, or $3.75 \div 37$ lbs. Similarly, the efficiency of the vertical opener, in Test No. 1, on the first passage of cotton through, was $6.25 \div (37 - 3.75) = 18.8\%$, and so on. Calculated on this basis, the efficiency of each unit as used in these tests, was as follows:

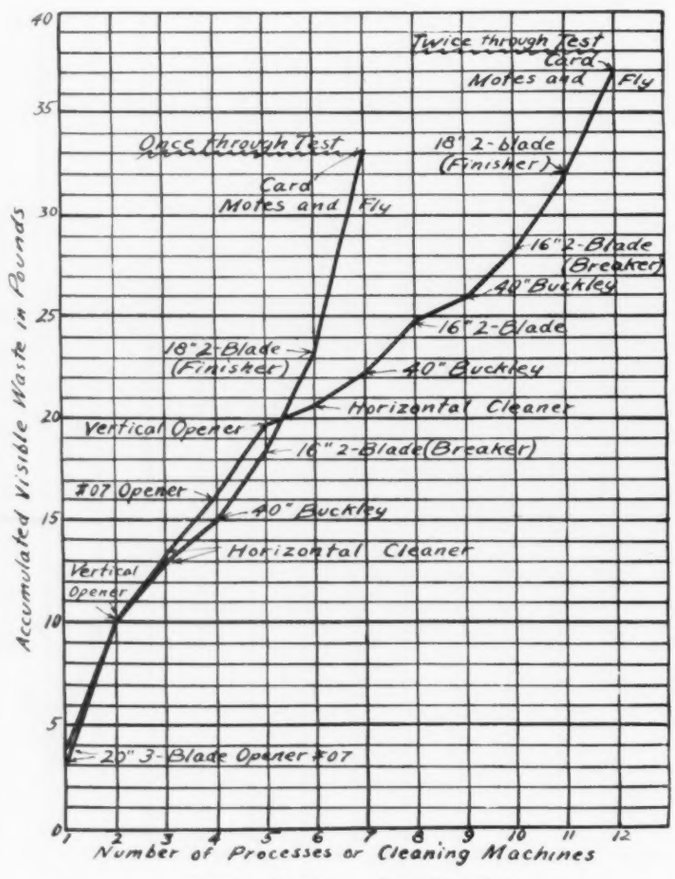
	Test No. 1 %	Test No. 2 %
20", 3-blade beater	10.13 1st time	10.57
Vertical opener	18.79 1st time	21.95
Horizontal cleaning machine	12.03 1st time	12.98
20", 3-blade beater	21.1 2d time	....
Vertical opener	17.35 2d time	....
Horizontal cleaning machine	5.79 2d time	....
Buckley section	8.61 1st time	10.0
16", 2-blade beater	18.50 1st time	18.78
Buckley section	8.25 2d time	....
16", 2-blade beater	20.25 2d time	....
Finisher picker	43.32	34.0

From these results, it is obvious how extremely important is the opening and cleaning machinery that precedes the lappers, since it removes two-thirds of all the dirt, leaf and trash, as shown in Test No. 1. On the other hand, the benefit derived by passing through the breaker picker twice instead of only once, seems not to be worth while, as the total waste removed by the lappers in Test No. 1 over Test No. 2, was only 6%—11.15 lbs. and 10.40 lbs., respectively. But the effect on the cards was conspicuous, since, with the more complete cleaning obtained in Test No. 1, only 5.11 lbs. of motes and fly was taken out by the cards in this test as against 9.65 lbs. in Test No. 2, substantially reducing the wear on the card clothing in the former case and diminishing the frequency of grinding and reclothing; and, what is most important of all, the character of the card strips was raised in quality at least a full grade, and was increased in value, at current prices, 2c per pound. The cards in Test No. 1 were producing from 315 to 340 lbs per week of 48 hours; and in Test No. 2, from 340 to 400 lbs. per week.

Comparisons

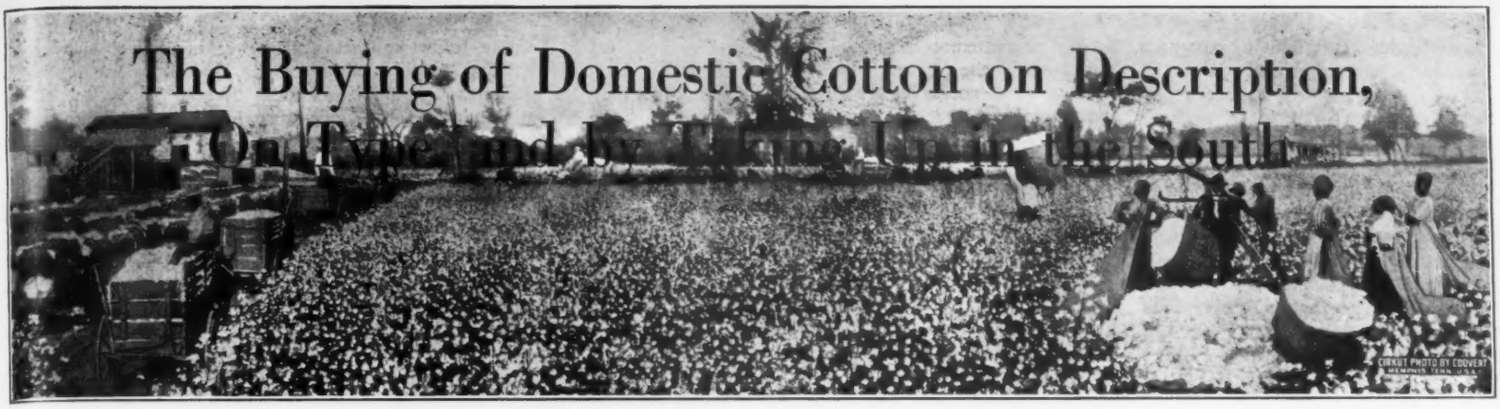
An examination of Tests Nos. 1 and 2 shows that whereas the 20-in. blade beater in the former removed 3.75 lbs. of dirt, and in the latter only 3.50 lbs. of dirt, the efficiency of this unit was greater in Test No. 2 than in Test No. 1; that, whereas the vertical opener in Test No. 1 removed 6.25 lbs. of dirt the first time through, and only 3.62 lbs. the second time through, the efficiency in each instance was approximately equal—18.79% and 17.35%; that, whereas the horizontal cleaning machine in Test No. 1 removed, the second time through, only 30% as much dirt as in the first time through, yet the ratio of efficiency in

(*Continued on page 203*)



Opening, Picking, and Carding Tests

The Buying of Domestic Cotton on Description, On Type and by Taking Up in the South



A Source of Large Possible Savings For Mills— Industry's Benefit May Be Larger Than Individual's

By Charles H. Clark

LACK of literature regarding the manufacturing or merchandising methods of any given industry usually indicates that they are stabilized, and are considered by the majority of that industry as satisfactory and not amenable to improvement, or it may mean that the satisfaction with existing conditions is born of ignorance and tradition which none had thought it worth while to disturb.

There is no lack of literature covering practically all phases of the marketing of cotton, and there is an abundance of literature regarding cotton manufacturing, but there is an almost complete absence of literature relating to methods of buying cotton by the mills, with the possible exception of that having to do with hedging in the cotton futures market, and that when legitimately utilized by manufacturers is merely price insurance and has no direct relation to methods of buying the actual staple.

The cotton industry of the United States is the largest of any country in the world in every factor of importance, and particularly in the number of bales of cotton bought and consumed annually and the value of cotton consumed and cotton manufactures produced. That such an enormous industry could have been created without a high average degree of skill and intelligence in manufacturing and merchandising is not to be considered for a moment, but it is recognized throughout the industry that cotton mill organizations are much more skilled in manufacturing than in merchandising, and as buying is quite as essential a factor of merchandising as is selling, then the lack of literature of cotton buying and of discussion of the subject in manufacturers' conventions allow at least the inference that this end of the cotton manufacturing business is not given the attention that it deserves. A complete analysis of the subject would require the space of a large volume, but it is possible that the few phases of the buying problem to be discussed in this article may disclose opportunities for improvement in present methods that are quite as important and as likely to be resultful in dollars and cents as effort that has been and is being made to improve efficiency and economy in merchandising at the selling end.

Cotton a Major Part of Cost

Of the principal elements of cost in the manufacture of cotton yarns and cloths that of the raw material varies radically as between mills producing the coarsest counts and those manufacturing the finest count yarns and cloths, and it also varies with the cost of cotton from season to season; but, roughly, this percentage of total cost ranges from one-third to two-thirds, with an average of not far from 50% of total cost; labor costs range from 20 to 50%, and the balance of cost is salaries, selling expense and overhead.

At a tremendous expenditure of effort during recent years many mills have been able to increase unit production and decrease resultant labor cost a maximum of something like 10%; at large expense for community houses and utilities a considerable number of mills during the same period have been enabled by adding night shifts to cut costs during temporary periods of great activity by as much as one cent a pound of total product; a number of mill organizations are now concentrating their activities upon reducing selling costs, which, at the outside are not more than 7% on cloths and 5% on yarns, and it will be admitted we believe that a saving of ⅛c a yard in selling cost of medium count cloth and of ½c a pound on yarns of medium and coarse count would be an accomplishment approaching closely to maximum possibilities.

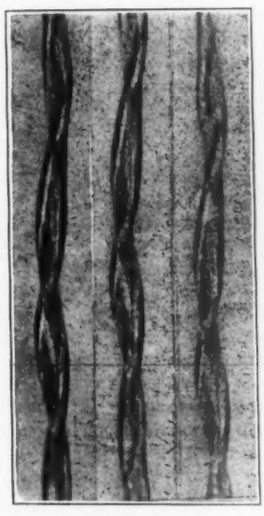


Fig. 1

Fig. 2

Microphotographs Showing Elements of Character in Cotton. Fig. 1.—Full 1 3/16 in. Arkansas Cotton of Even Spirality and Good Spinning Quality. Fig. 2.—Full 1 3/16 in. Mississippi Cotton of Irregular Spirality and Poorer Spinning Quality. (Graphs by James McDowell.)

Saving on Cotton Greatest

Now let us take for illustration the rather extreme case of a mill in which the cost of cotton is two-thirds of its total cost; then the principal items of cost might be divided about as follows:

	Cost Per Pound	% of Total Cost
Overhead, supplies, etc.	$133,334	13.34
Labor	200,000	20.00
Cotton	666,666	66.66
Total Manufacturing Cost	$1,000,000	100.00

Now let us assume that this mill organization has gone the limit in cutting overhead, reducing unit labor costs through increased production per operative and machine, and let us see what the result would be. While this distribution of manufacturing costs is strictly applicable only to one making ducks, drills or heavy sheetings, they are arbitrarily adapted to 5.35 yard 64 x 60 print cloths because production and cost figures for the latter happen to be available. In compilating these figures, and assuming that there is a saving of 10% in labor and 1c per pound in total overhead figures, then we get approximately the following results:

	Cost Per Pound	% of Total Cost
Overhead, supplies, etc.	$109,034	11.42
Labor	180,000	18.83
Cotton	666,666	69.75
Total Manufacturing Cost	$955,700	100.00

The point that we desire to emphasize in this connection and one that would be brought out only a little less forcibly if applied to the case of a mill making fine count goods and using less cotton, is that the greater the saving in all other items than raw material, the larger becomes the percentage of the latter to the total cost. Therefore, even though manufacturers previously had regarded as of little consequence the possible savings in careful and improved methods of

cotton buying; that item of cost as a possible source of added economies and profits must assume a more attractive aspect when all other methods have been exhausted.

The cost of cotton in this typical case has increased from 66⅔% of the total manufacturing cost to 69.75%. Now assuming for ease of figuring that cotton is 20c per pound the total of $666,666 will purchase 6,666⅔ bales or 3,333,330 pounds. If only one-half cent a pound can be saved in the actual process of cotton buying, or in using a lower grade and shorter staple cotton to produce the goods, or by using a better cotton that will allow the speeding up of machinery or lessen twist in the roving and spinning processes, then we shall have a saving in the cotton alone of $16,666. If we can average a minimum saving of 1c per pound on the cotton there will be a net saving of $33,333. It will be noted that while the saving of only ½c a pound on the manufacturing cost of a million dollars is only 1.66% it becomes 1.74% after maximum overhead and labor savings have been introduced, and whereas a saving of 1c a pound in cotton buying is only 3.3% of the original manufacturing cost, it becomes 3.48% in the second instance. For mills that are barely breaking even after the introduction of all other economies it can be seen that the possible saving of more efficient cotton buying is all the difference between a fair profit and no profit. As it is a fact that certain mills that formerly bought cotton on description and are now buying on type are making as average substantial savings as this, and that the few mills taking up cotton in the South are doing even better, it will be seen that there is a substantial reason for exploiting the advantages and disadvantages of these three methods of cotton buying.

Buying "On Description" Undefinable

And now for the information of those who are not intimately acquainted with cotton buying methods let us attempt to analyze the differences between buying on description, on type sample and by taking up cotton in the South. First, it must be frankly admitted that what has been commonly known in the trade for many years as buying on description is incapable of accurate definition, but may possibly be explained. Webster defines the word description as "an enumeration of the essential qualities of a thing or species." The qualities of cotton that require definition if the raw material is to be purchased upon a theoretically satisfactory basis by specification, or description, are staple length, grade and character. The definitions of these qualities must be based upon general trade usage, or must be officially promulgated in some manner that forces their acceptance by the trade or renders them generally acceptable.

It is true that the cotton exchanges had their grade and length standards before any attempt at official standardization by the Government, but the former were not commercial standards and were never so accepted by the trade. The first step in standardization by the Department of Agriculture was made in 1909, when a set of types of nine white grades was prepared and known as "the permissible standards." Although these permissible standards were adopted by the New York and New Orleans cotton exchanges their use never became common, and the same is true, as far as mill buying is concerned, of the official cotton standards, established and promulgated under the authority of the United States Cotton Futures Act, December 15, 1914, and as amended at various times until the present United States standards for grade and color became effective August 1, 1923. According to this feature of the United States Cotton Futures Act the official standards for grade require their use in all spot cotton transactions in interstate and foreign commerce when cotton is described by any standard or system of classification.

There were no official standards for staple lengths until their promulgation under the authority of the United States Cotton Futures Act, October 25, 1918, and, like the standards for grade, use of the government standards for staple lengths were made mandatory in interstate and foreign commerce in all cases when a standard is employed that describes length alone as distinguished from length combined with character. For character there are no official standards, although the Bureau of Agricultural Economics of the Department of Agriculture has been conducting investigations as to the spinning qualities of various cottons for several years with this end in view. Not only is there no official standard for character, but it is doubtful if any two persons selected promiscuously from the trade would have the same opinion as to the importance of character in cotton, or as to what constitutes character, to say nothing of how it should be defined.

THE author of the accompanying article characterizes the cotton buying methods of many domestic mills as haphazard, illogical and inefficient. Glaring lack of technical and practical knowledge of the staple; its purchase "on description" when no standards were available to define it; increased buying "on description" stimulated by adoption of Government standards for length and grade, but standards that failed to define that most important spinning quality of the staple—character, are all factors responsible for buying shortcomings.

Buying on type, whether buyer's or seller's type, supplies a definite standard for trading and is far superior to buying on description when both buyer and seller have adequate knowledge of the staple traded in, but as commonly practiced it is of little more advantage to the mill than buying on description.

Taking up cotton in the South presupposes buying against mill types, and its advantage lies in the fact that it is a final transaction eliminating rejections and arbitrations and practically all important cause of friction between buyer and seller, thus influencing the latter to make a correspondingly low price. Taking up cotton in the South, however, requires the services of an experienced and relatively high-priced cotton man, and for that reason its adoption is confined to the large mill, or to groups of small mills using not much less than a total of 50,000 bales annually. It is claimed that average savings from such buying will average at least $5 a bale and run as high as $10. Incidentally it is held that any marked increase in cooperative selling of cotton inevitably will stimulate cooperative buying.

As the cost of cotton and other raw materials averages not far from 50% of the cost of the finished product, and as the efficient and scientific selection and buying of raw materials have received much less attention than efforts to improve manufacturing and merchandising efficiency, it is suggested that this end of the business be given the attention that it deserves. It is also suggested that every mill keep departmental accounts for cotton and other raw materials and make a somewhat detailed profit and loss statement available to stockholders.

It is also suggested that, as the selection of the right kind of cotton is just as essential to the economical production of a certain quality of yarns and cloths as is the processing of the staple, the control of its selection, classing and everything pertaining thereto be made a responsibility of the mill management, and not of the mill treasurer or other official, the latter confining their activities in cotton buying to its financing, hedging and deciding when and how to buy.

The author acknowledges almost complete lack of personal experience of cotton selection and buying, and for the facts and many of the suggestions contained in the accompanying article he wishes to acknowledge indebtedness to a large number of men connected with the industry from grower to manufacturer, it being his hope that the ideas advanced may be found constructive and of value to the industry.

Grade and Length Standards

For the purpose of clarifying later discussion it may be well to attempt to define grade and length of staple as standardized under the United States Cotton Futures Act. While the standards of grade as shown in government boxes cover only relative color, cleanliness and preparation for Uplands, extra staples and American-Egyptians, there are certain other qualities involved, some of which are more closely related to length and character than to grade, that are eliminated in the standard samples and specified in the Cotton Futures Act as an official cause for rejections when tendered on contract: These include reginned cotton, repacked cotton, mix-packed or false-packed cotton, water-packed cotton, plated bales and excessive amounts of gin-cut cotton, immature staple and perished staple; neither are the standard samples supposed to contain bollies, snaps or grabbots.

While the government's official standards for length are expressed in thirty-seconds of an inch, the practical form of the standards was prepared for Uplands from ¾ in. to 1 5/16 in. by eighths of an inch, and for Sea Island and American-Egyptian in length of 1½, 1⅝ and 1¾ inches. The lengths are supposed to represent the body of pulls of cotton in a relative atmospheric humidity of 65% and a temperature of 73° F.

No Standard for Character

For character there are no official standards excepting to the extent that certain elements of cotton character are involved in the standards for grade and length. Among the most important elements of character in cotton are diameter or fineness, spirality or natural twist, strength, elasticity, relative maturity and immaturity. Technically, uniformity of length as well as uniformity of fiber diameter are elements of character rather than of length of staple, and if there were official standards for character probably they would be included in the latter. While physical methods of checking in a practical and easily applied manner all of the important elements of character seem difficult of attainment, it is not impossible that such standards will be developed in time.

Most men having a scientific knowledge of the cotton fiber and the manufacturing processes as well will probably agree that the spinning qualities of cotton as defined by character are

more important than those defined by grade or length, for it can be demonstrated that either consciously or unconsciously the best judges of cotton always have character in mind when they are classing. For instance, when classers pull a handful of cotton preliminary to stapling the "drag" or "sing" of the pull indicates whether it is hard or soft, and those qualities are governed by the spirality of the group of fibers, and, to some extent, by their diameter, both of which are elements of character and not of either grade or length. It is generally true, of course, that the longer the staple the greater is the spirality per inch, and the finer also is the fiber diameter.

Private Type Standards

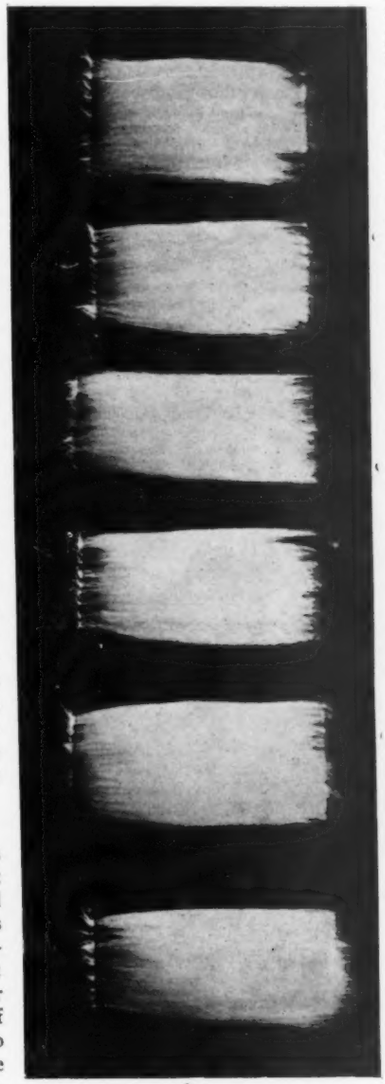
In addition to the Government standards for grade and staple which cover all domestic cottons, there are also the standards for grade and staple of the Staple Cotton Cooperative Association of Greenwood, Miss., and those represented by the type samples of the American Cotton Growers Association and several other cotton cooperatives and merchant-shippers. An important distinction between the type samples of the cooperatives and merchant-shippers and the Government standards is that the former have been classed out for character as well as for grade and staple, and when utilized as type samples afford a far more definite basis of buying the particular kind of cotton desired by a mill than do the Government samples. Furthermore, the cooperatives and merchant-shippers who maintain standard types are quite as likely to stick to those standards from season to season, irrespective of changes in average grade and length of a crop, than is the Government.

Government Standards Variable

It is a noteworthy fact that changes from season to season in Government standards have caused the trade all sorts of annoyance and much serious trouble, and sooner or later the question of maintaining permanent government cotton standards for grade and length, irrespective of seasonal changes, must be fought to a finish. It does not appear to be generally appreciated, for instance, that this season's Government box for strict low middling is but little if any higher in grade than the box for low middling, the latter being closely comparable with last season's box for the same grade. In view of the average high grade of this season's crop such procedure may be warranted if it were generally understood that the Government standards are flexible and subject to change every second season, but that is not the general understanding, and as a result the trade is paying a higher price this season for strict low middling than is warranted; in fact, those who are aware of the change in the strict low middling box have either eliminated it, or are demanding a proportional reduction in basis.

Price Offsets Inefficient Buying

From what has been said regarding present and recent standards that may be made the basis of description buying, and the lack of such standards prior to the promulgation of Government standards for grade and staple, it can be seen that previous buying on description must have been of an extremely indefinite character and the cause of frequent misunderstanding between buyer and seller, with a resultant large percentage of rejections and arbitrations. Although this is the case, all but a small percentage of mill buying was done on description, and nothing but the high reputation of the majority of middlemen and manufacturers and their liberal interpretation of a policy of give-and-take, prevented more frequent misunderstandings and greater trading and manufacturing losses. It must be remembered, of course, that during a greater part of the period when the cotton business was conducted in such loose fashion it was a relatively cheap commodity that was dealt in, seldom averaging above 8c a pound, and the results of lax buying and selling methods naturally were not as expensive as with cotton at 20 to 35c a pound.



Pulls of Cotton Showing Proper Method of Marking Its Body for Measuring Length of Staple

(Photo by James McDowell)

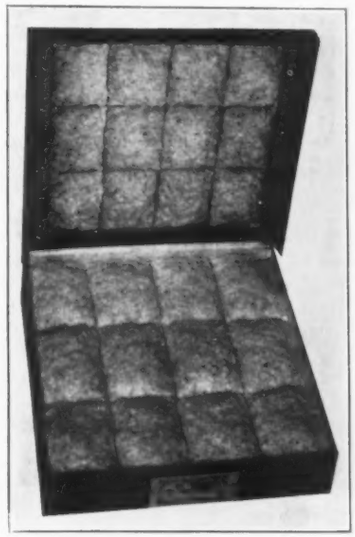
Old Methods of Buying

In the old days, as now, the bulk of the cotton buying was done by the treasurer of the mill. Seldom did the treasurer have mill experience and seldom did he have any technical knowledge of cotton, but usually he was a shrewd trader, was an excellent judge of prices, and relied upon his social, fraternal or college friends, or, perhaps relatives, in the cotton trade to supply him with the right kind of cotton and market information. Occasionally there was a good cotton man at the office or at the mill who did the classing, but more frequently some boy at the office went through the motions of classing, or the agent or superintendent of the mill was expected to register a complaint when the cotton was too poor to run satisfactorily. Whether or not there was a cotton classer employed, many treasurers considered it good judgment to reject a certain proportion of nearly every shipment in order to keep shippers and brokers on their toes.

An occasional treasurer had an inherent or acquired keen knowledge of cotton grade, staple and character, but they were such rare exceptions that their reputation in the cotton trade exists to this day. It is true that an intelligent man who is handling and pulling cotton day after day and month after month, and who makes proper use of the senses of touch, sight, hearing and smell, will in time acquire an uncanny knowledge of the particular cottons that he is regularly using, but that does not prevent him from getting stuck, for there were mighty few treasurers or classers who, in the old days, carefully sampled a representative number of bales of each shipment. Such lax methods may have been justified when cotton was relatively cheap and competition was less keen, yet they exist in altogether too numerous instances today and are a major cause of the non-success of many mills.

In buying cotton in the old days description was largely confined to a designation of grade and locality. The description sometimes covered "even running" and "full bodied" cotton, and in the case of cottons longer than uplands, or 7/8 to 1 inch cotton, might specify length of staple; even for the latter, however, source of supply usually indicated length; for instance, "benders," "creeks" and "peelers" all referred to fairly definite lengths of extra staples. Those were the days of "North Georgia," "Allen seed," "canebreak," "Mobile" and "Orleans," and most of these terms meant something very definite to the buyer and something rather less definite to the seller as to staple length and character. And so did "Island Sea Island" as distinguished from Sea Island cotton grown in Florida, Georgia and South Carolina. "Canebreak cotton" was grown in the bottom lands along the Coosa River, Ala., and was regarded as a shy to full inch cotton. "Orleans" was hard western cotton concentrated at New Orleans and years ago did not vary greatly in staple length. "North Georgia" cotton from around Athens was assumed to be commercial to full 1 1/16 inches in length, and some mill buyers are still specifying North Georgia 16ths, although no full 1 1/16 inch cotton of any consequence has been raised in North Georgia for several years.

Naturally, with such indefiniteness of description brokers and shippers either endeavored conscientiously to learn exactly what each mill's requirements were and met the actual demand as nearly as possible, or took advantage of every opportunity to "put something over" the mill. Naturally with description so indefinite deliveries of cotton to the mill averaged no better than was warranted by the price paid. Cotton shippers, merchants and brokers waxed rich in those good old days if they stuck closely to the actual cotton and avoided purely speculative trading in futures. Enormous sums of money were paid annually by the cotton mills as tribute to the superior cotton knowledge and shrewdness of middlemen, but competition in the yarn and cloth markets was less keen in those days, and profit margins were broad enough to absorb these and other losses of inefficient management and merchandising.



Middling Box of the Universal Standards for Grade. Photo by U. S. Dept. of Agriculture

That there should have been no marked falling off in description buying of cotton in recent years is not surprising in view of the fairly definite standards for grade and staple length now available, but it is remarkable that there was no little buying "on type" prior to the promulgation of government standards. As competition in the yarn and cloth markets, and particularly as between the North and South, has increased, and as the annual average crop of cotton has

risen there has been a co-incident increase in buying of cotton on type. Much of this buying on type, however, is actually buying on description, for it is government standards that are usually referred to in the buying of both short and long cottons, and increasingly the standards of the Staple Cotton Cooperative Association for extra staples. This is quite as much description buying as though a mill treasurer defined the kind of cotton he wished to buy and then gave that description to his brokers.

One mill, for instance, describes the cotton that it wants to buy as follows: "Strict middling 1 1/16 inch, even running, western cotton of good character." As an actual fact the treasurer of this mill does not expect better than full inch cotton of middling grade and passes all such cotton if it is even running and of good character. He feels that he does not pay more than the cotton is worth, and probably most of the brokers believe that they are getting the better of him by not meeting his specifications. It happens to be known pretty generally throughout the cotton trade that the written description on which this treasurer buys is very accurately descriptive of a type bale that is reserved at the mill, and knowing that there is always the possibility that the treasurer would demand delivery on type, and could do so if he cared to make an issue of it, certain brokers and shippers will sell this mill on description only when they can get a price that will warrant them in delivering cotton equal to the type bale. To that extent this treasurer is curtailing competition and is running the risk of bidding the market up on itself.

Stimulated Type Buying

Were it not for the fact that there is growing appreciation in the trade of the value of character of cotton, as distinguished from length and grade, it might seem somewhat peculiar to the outsider that buying on type should increase now that very definite standards of length and grade are available for description buying. Without attempting to define the relative value of the various spinnable qualities of cotton in detail, it may be stated that it is well understood by those who are expert in their knowledge of both manufacturing and cotton that as between length and character on the one hand, and grade on the other, the former are about as three to one in cotton selection. It is difficult to define character, and impossible to express it in a practicable manner for description buying, but it can be shown accurately by a type sample. So can length and grade. These are the reasons why buying on type is safer and more practical than buying on description, and why, if the cotton is bought at the right price and classed in by a man who really knows cotton there must be a considerable saving to the mill over buying on description. Buying on type, however, will prove little more effective or economical if the services of a competent classer are not employed. Lacking such a classer it will not be long before brokers and shippers are alive to the situation and will take as full advantage of it as they would if the mill were buying on description.

Middlemen: Costs and Profits

Whether cotton is bought on description, on type or taken up in the South it is well to start with the assumption that every factor handling cotton from the grower to the mill buyer is in the business to make a profit and not for health alone. The grower, whether he mortgages his crop to the country merchant or to the ginner, or sells to the f. o. b. man or merchant-shipper, or through the cooperatives, can always be depended upon to endeavor to get something better than cost (if he knows his cost) for his cotton, and seldom is satisfied no matter how great his profit. On the other hand, cotton handling by the country merchant and the ginner is, in a sense, a side line, and while naturally they would seek to make as large a profit as possible on the cotton handled, they will be fairly well satisfied if the sale price covers the grower's indebtedness to them plus cost of carrying that indebtedness and the cotton, and a moderate additional profit.

Cotton buying and selling is the sole business of the f. o. b. man, factor, merchant-shipper, and the eastern merchant or broker, the latter being inaccurately known in the South as buying brokers for the mill. For the mill buying direct, however, there is a certain differentiation between these various middlemen that it will not do to overlook: The f. o. b. man and factor, like the country merchant and ginner, handle round lots of cotton and, with the exception of attempting to concentrate as large lots of even running cotton as possible, sell the cotton as they buy it and are burdened with but a small overhead. A selling price that is $1 a bale higher than the buying price amply covers their expenses and gives them a fair profit under ordinary conditions.

But the merchant-shipper in the South and the eastern merchant or broker are burdened with a very considerable overhead, which with the profit must be added to the cost of the cotton and become a part of the selling price, this expense and profit per bale depending, of course, upon the number of bales handled during a season. Expenses for the southern merchant-shipper are naturally much greater than those for the eastern merchant or broker, as they include concentration, classing, compressing, storage, etc., while the latter factors have only salaries, office and incidental expenses to cover. Nevertheless, to net a moderate profit on their season's business it is usually necessary for the eastern merchant or broker to add not less than $2 to $2.50 a bale to the price of the cottons invoiced by the southern shipper, and this invoice price not including freight or cost of rejections and arbitrations. Although the shipper's costs are usually spread over a very much larger number of bales than those of the eastern merchant or broker, it is probably safe to assume that they must add as much as the latter per bale in order to net a fair profit, and this would not include losses due to rejections.

Classing Room of Newburger Cotton Co., Inc., Memphis, Tenn.

Rejections and Replacements

Rejections and arbitrations with their accompanying replacements and settlements are the bete noir of the cotton shipper. The advantageous replacements and settlements frequently resulting from rejections and arbitrations are regarded by some manufacturers as legitimate perquisites; by a very large number of manufacturers rejections of some portion of each shipper's invoices every season are considered necessary to make the shipper understand that the manufacturer is a keen buyer. There will always be rejections and arbitrations as long as there is description buying, and as long as buying on type is not backed up by efficient classing in. No shipper can guarantee 100% perfect deliveries on description or on type; on description, because of its indefiniteness, and on type because the human equation is never perfect and never will be. Cotton can be bought on either buyer's or shipper's type from reputable shippers by manufacturers who have efficient classers with but a small resultant percentage of rejections and arbitrations; it cannot be bought on description, no matter how reputable the shipper or efficient the classer, with as small a percentage of rejections as when bought on type. But there is a method of buying by which rejections and arbitrations can be eliminated, with the exception of possible arbitrations for differences in weight.

The subject of rejections and replacements is too broad in its ramifications to be covered in detail here, but it will be necessary to explain two or three important features that do not appear to be generally understood: (1) They add very definitely to the cost of handling cotton, and shippers must get that cost back before they can net a profit; (2) shippers that have had long experience in the business have each mill buyer ear-marked as to the percentage of rejections expected from him and the additions to prices quoted to such buyers may range from 50 to 100 points; (3) certain reputable and large southern shippers will not sell a pound of cotton to eastern mills because of the trouble and expense involved by rejections, arbitrations and replacements; (4) the major part of export business in domestic cotton is done without rejections, replacements and arbitrations for length, grade and character, because it is classed in and taken up by the foreign buyer in the South before shipment.

Mills That Have No Rejections

There are two large Japanese organizations that purchase the major portion of the cotton exported to Japan and all of this cotton is taken up in the South, and Americans are employed to do the classing. A very large proportion of the cotton they buy is in round lots which is concentrated and after classing is ear-marked for mills in Japan that are known to require the length, grade and character of cotton in those particular lots. Purchases are made from country merchants, ginners, f. o. b. men, the cooperatives and merchant-shippers, and of course the bulk of the cotton comes from the last two named factors. Most of the cooperatives and shippers are quite as willing to sell in round lots after concentration as from classed samples, and they do not appear to be concerned if a buyer purchases a certain portion of his cotton direct from the sources of their supply, for it is only during the

heaviest movement of the crop that such sources are available and this extra competition is not felt during those periods. A certain large Canadian mill has taken up the bulk of its domestic cotton purchases in the South for years, and their representative who is in the South during the greater part of each season buying and classing has the reputation of buying his cotton right, both as to character and price. A few domestic mills have taken up a small proportion of their season's requirements in the South during recent years, but taking the industry as a whole this kind of buying has received little consideration.

Procedure in Taking Up Cotton

Some of the foreign mill buying organizations in the South purchase several hundred thousand bales annually and they have several buyers and a large corps of classers, but the explanation of procedure in taking up cotton may be simplified if a hypothetical case involving the purchase of about 30,000 bales annually of hard western cotton be considered. If the bulk of the buying were done over a period of three or four months a capable buyer could do all of the work including the classing, but if the bulk of the buying was to be finished in two or three months and was scattered over a rather wide area he would require the services of a classer. The buyer should be an expert judge of cotton, have as complete knowledge as possible of the staple from the seed to the mill, have equally broad knowledge of the ginning and handling of cotton including trading methods of middlemen, have intimate acquaintance with the types, classing ability and reputations of as many of the merchants and cooperatives as possible, be a shrewd trader and be of unblemished character. If the buyer is as well acquainted with preparatory and spinning processes of manufacturing, and of the various cottons that are most suitable for producing the counts and varieties of yarns spun by the mill or mills he represents, his value to the mill organization will be largely increased. In either case it is highly important that the buyer should acquaint himself with the cotton needs of the mill he represents and should cooperate with the mill manager in developing types for the various mixes. Such cooperation of an experienced cotton man and an experienced mill man frequently will result in substantial savings before a single bale of cotton is purchased.

A volume might be written on this subject alone, but it will have to suffice to state that the saving will sometimes result from a reduction in price to the basis of that which the mill actually buys instead of what it thinks it is buying, and will sometimes involve length of staple and more frequently character of the cotton. It is a common thing to hear shippers or brokers, when discussing the length of cotton purchased by certain mills, ask whose quarters or whose 16th they are talking about, and if it is a mill with whose requirements they are not acquainted the same queries will be made even though Government or association lengths are specified. When it is a description of character that is sought it is frequently the case that a type sample does not give the complete answer, for knowledge of character is more infrequent and variable than that of length and grade. This is due partially to ignorance, partially to the human equation, and not infrequently it becomes practically an invitation to the broker or shipper to play "the old army game."

Examples of Efficient Selection

The experienced buyer frequently can show the manufacturer that if he will allow a little more lee-way as to length and grade the cost can be cut 50 to 100 points without any decrease in production or quality of product. Frequently he will be able to show the mill man that by the use of a little better character cotton at no greater cost, or by paying a little more for character and using a certain percentage of this cotton in the mix, he can get 10 to 20% more production at the front roll of the spinning frame without sacrificing quality.

If the mill man insists that all of his full 1⅛ to 1 3/16 inch warp cotton shall come from Delta points he is likely to start a stiff argument with the experienced buyer, for the latter will want the privilege of buying Texas cottons of these lengths at their source and at a possible saving of 100 to 200 points, instead of being obliged to buy them after they have been shipped into Memphis and recovered and re-marked. If the mill has proper cleaning machinery the buyer naturally will protest against being obliged to pay the higher price for strict middling or good grades when he knows that a middling white cotton of better character will give a better break in the yarn and usually at a considerably lower net price, even allowing for waste. Such examples might be enumerated ad nauseam, but these will have to suffice.

The Preliminary Survey

Before the experienced cotton man starts out on his season's work he will have made one or more trips during the growing season through the sections where most of his buying is done and as soon as cotton commences to come in he will obtain representative samples from each of these growing sections and compare them carefully for character with samples of the previous season because of deficiencies Such examination may result in his cutting out previously favored sections entirely or in renewing purchases in sections that had been cut out the previous season because of defficiencies in staple or character. When he starts for the South he may have definite knowledge of the amount of cotton to be bought for only a few weeks, or for the whole season, and he will have instructions from the mill treasurer, or other official who handles the cotton financing, regarding basis and other price details, and for such matters he will be in almost daily touch with the treasurer's office.

Samples of Cotton Displayed for the Examination of Buyers in a Factor's Office. Photo by U. S. Dept. of Agriculture

The Eastern Broker's Problem

If this is the mill's first season of taking up cotton in the South it is not at all improbable that some of the treasurer's old friends among local merchants and brokers will have endeavored to show him the error of his ways, and have protested that they could give him just as cheap cotton delivered at the mill as he can buy in the South; and no doubt the treasurer has made it plain to them that it is not a case of buying in the South solely, but of taking up in the South or wherever the cotton is located, and if they can match his buyer's prices for the same cotton they will be given the preference, or at least an equal chance. As there is no reason why eastern merchants and brokers cannot make good such a claim sometimes, the buyer would be foolish to object, for the larger the competition for his business the lower the price he is likely to get. This naturally raises the question as to why the eastern merchant or broker cannot provide this or an equal service for eastern mills, as do the merchants and buying brokers for British and other European mills. If they can do so in a large way it will render unnecessary any marked reorganization of the cotton trade to meet a demand for more efficient purchasing by the mills; if they cannot do so in all cases there should be for them and for all their capable men positions with the mills either as buyers, or perhaps as officials. This is a problem that can best be solved and answered by them and as space is lacking for its further consideration here this suggestion will have to suffice for the present.

The Buying of Round Lots

The mill buyer is now in the South at the opening of the season and comparatively little of the cotton that his mill uses has been concentrated and classed. He is therefore obliged to seek round lots, and if his mill is in urgent need of cotton, or if the price outlook from the standpoint of both futures and basis seems favorable, he will proceed to pick up round lots running largely to the character, length and grades that his mill can use. If large lots are desired quickly he will save time by going to f. o. b. men, shippers or cooperatives, but if time is not an object he may look over gin samples held by country merchants, and by ginners who buy and sell as well as process seed cotton.

In buying round lots the price usually made by the seller and agreed to by the buyer is an average price for the lot, and that is based on a difference off or on the grade that is selected as an average for the lot. For instance, a round lot may contain a certain proportion of all grades from strict middling down to low middling but averaging about strict low; therefore, the price would be based on strict low. If the cotton is bought on gin samples the buyer waits 20 or 30 days for compress samples, and when classing out it is likely to be temperamentally difficult for him to find much cotton above strict low, or at least he will involuntarily try to get enough offs to balance the premiums that will have to be paid for the bales above strict low.

When the cotton is taken up it is paid for "sight draft, bill of lading attached," with mill weights guaranteed. It should be stated that arrangements can usually be made with large operators to have payments spread over several months, paying for the cotton as shipped, plus storage and incidental expenses to that date, but without interest on the seller's capital thus tied up. In other words, it is possible to obtain from shippers, cooperatives and f. o. b. men practically all of the physical and financial accommodations in buying round lots

that would be granted if classed cottons were bought.

The saving as compared with the purchasing of classed cotton will not be far from 5% of the price that would have to be paid for the latter when bought on type or on description, and this at current prices would not be far from an average of 1c per pound. When buying round lots from growers, ginners or county merchants the saving will, of course, be much greater even though the buyer has to assume responsibility for concentration, warehousing, shipping and other handling and the expenses incident thereto, for the net cost to him will be little more than that to the southern shipper.

Of course, in buying round lots it would be of great advantage to the buyer if the requirements of his mills make possible the use of practically all lengths and grades thus bought; otherwise, a small percentage of each lot will have to be resold. In this connection it may be stated that certain of the large foreign organizations regularly buying round lots have the reputation of covering the cost of their buying and classing with the profit made on lots resold but it is possible, of course, to make a loss as well as a profit on such transactions. Most southern mills are experienced in round-lot-buying of local cottons and should experience little difficulty in engaging in similar transactions in the West providing they have capable buyers. Eastern merchants and brokers almost never handle round lots, but there is no reason why they as well as mill buyers should not make such purchases. It is of some interest in this connection to note that the growth of cooperative selling has not greatly reduced the volume of transactions in round lots, it being reliably reported that approximately half of the annual sales of certain of the largest cooperative organizations is in round lots.

Possible Saving on Classed Cotton

When classed cotton is purchased from southern shippers or cooperatives the saving to the mill naturally will be less than in the buying of round lots, but at current prices it will seldom average less than ½ to ¾c a pound delivered at the mill, or $5 to $7.50 a bale. As much as this is frequently added by shippers in quoting to many mills as insurance against rejections and replacements. Selling to mill buyers taking up in the South not only eliminates the rejection problem but also reduces shipper's carrying charges and other incidental expenses, and it must be remembered that carrying charges alone for most shippers average a rate of not far from a cent a pound a year. It may be readily appreciated that if southern shippers and cooperatives could depend upon selling direct a substantial proportion of their cotton with rejections and replacements practically eliminated they could well afford to guarantee even larger savings to the mills than those mentioned, for their selling expenses for that portion of the cotton handled would be cut to the bone.

The Cost of Taking-Up Cotton

The cost to the mill using 30,000 to 50,000 bales annually of taking-up cotton in the South ought not to exceed 35c a bale, and for a mill, or group of mills, buying 100,000 bales or more annually in this manner, should not exceed 25c a bale. These figures would cover salaries and all travelling expenses of the buying and classing organization and also telegraph and telephone charges. In fairness there should be deducted from this expense a certain portion of the previous cost of buying and also the cost of arbitration. A large part of the time previously devoted by the treasurer or other official who did the cotton buying would be released for more important activities, although it would still be necessary for this official to keep in close touch with the cotton market, for in addition to financing the cotton, his judgment would determine when and how to buy and he would remain the final arbiter of prices.

For the mill purchasing not much more than 50,000 bales annually the buyer would do the classing as well as the buying. A competent man, when "on location" may be expected to class from 350 to 400 bales a day with the weather and other conditions favorable. If it be necessary to make long jumps from one buying locality to another the weekly average will necessarily be reduced; but should be not much less than 2,000 bales during the most active part of the season. For manufacturers who remain doubtful as to the savings that may be effected by taking up cotton in the South, it may be stated that it would be possible to find competent buyers who would be willing to contract to buy 50,000 bales or more annually for 50c a bale and guarantee a saving over present cost of $5 a bale, failing to make which saving they would agree to deduct the difference from their guarantee of 50c a bale. The buyer entering upon such a contract naturally would demand full responsibility for the pricing, calling and hedging of the cotton, which latter responsibilities under usual methods of taking up cotton in the South would be those of the mill treasurer or other mill official. And it is because of the latter division of responsibility that it is desirable for the best interests of mill stockholders, directors and officials, that separate accounts be kept for the cotton department of the mill as well as for other departments, the cotton account being so drawn up as to clearly define the results of the actual buying of cotton as well as of its pricing and hedging.

The Treasurer's Responsibilities

If detailed cotton department accounts had been kept generally by the mills and made available to stockholders it is reasonably certain that for many mills they would have shown for the two or three years ended Dec. 31, 1926, that many of the heavy inventory losses of that period would have been traceable in large part to shrinkage in raw cotton values and also that a very large percentage of these losses could have been avoided if cotton price insurance in the form of hedging had been skillfully handled. No cotton merchant handling 50,000 bales or more a year would dare to conduct his business without adequate price insurance in the form of hedging, and it is quite as legitimate and necessary an undertaking for a cotton mill as it is for a cotton merchant. If the cotton mill treasurer would get rid of the physical details of cotton buying, and confine his efforts to the financial details, including hedging, he would have more adequate time for the latter and would find that his judgment was less likely to be warped by his preconceived opinions as a buyer or by outside opinions given to him in his function as buyer.

The buying of 5,000 bales of cotton for a mill, costing at current prices somewhere around $500,000 is an important matter, and when 10 times that amount and value is involved it is a very weighty matter, calling for honesty, skill and good judgment upon the part of those handling the responsibilities, and opening the door to large losses if there is dishonesty, lack of ability and poor judgment. It is not surprising that mill officials should be loath to render to a mill agent or to a mill buyer any important part of this responsibility unless they have implicit faith in the integrity and ability of the latter. The surrendering of the selection and taking up of the cotton, however, does not mean the relinquishing of any of the important functions having to do with the financing and pricing of the cotton or that open the door wide to possible graft.

Departmentalizing Cotton Account

If, and when mill officials realize the advantages of taking up cotton in the South and reorganize their cotton buying methods with that objective in view, the departmentalizing of their cotton accounts is likely to be recognized not only as a matter of good policy but as a necessity. This will be more definitely appreciated if, in addition to placing the taking up the cotton in the hands of an experienced buyer, they also give the mill manager the responsibility of selecting suitable types of cotton for his product, or divide that responsibility between the mill manager and the cotton buyer. They may also find it desirable to recognize that the cotton buying department, as well as the manufacturing department and the sales department, is capable of making profits or losses, and with this in mind issue a separate profit and loss statement annually for the cotton department.

It has already been made plain that the cotton department of a mill organization is capable of making as large profits as the manufacturing or sales departments, but while it is highly desirable to have separate accounts maintained for each department in order to keep the heads of each on their toes and insure maximum efficiency, it is possible to go too far in this direction and forget that a cotton mill is primarily in business for the purpose of manufacturing and selling cotton products at a profit, and not merely as an excuse for making a profit on its cotton buying. Nevertheless, certain mills that have always made a practice of keeping separate cotton accounts have followed the policy when figuring on yarn and cloth contracts of basing their cotton costs on the current market and not on the price of that particular cotton as shown by their books. In other words, their business is not run to see how cheaply they can sell, but to meet competition and make a fair profit. There are times, of course, with competition extremely keen when the favorable balance of the cotton department becomes a back-log that may enable the mills to meet competition and better it; even then, however, a conference between the mill manager and the cotton buyer may demonstrate that a new and suitable mix of cottons priced at current market values may provide a sufficiently cheap yarn to meet the serious competition.

A separate cotton account is needed primarily for the purpose of checking the efficiency of the buyer in purchasing the actual cotton and the efficiency of the mill manager in selecting cotton; it is equally important as a check upon the treasurer or other mill official for their efficiency in hedging and in pricing the cotton; it is also extremely important as a check on yarn and cloth costs and in stimulating the manufacturing and sales departments to make the profit on the basis of current raw material costs and not out of adventitious cotton buying.

In the cotton account it is highly important that there be careful differentiation between the figures showing the results of buying the actual cotton and those covering the operations of the treasurer or other mill official in hedging, calling, pricing, fixing basis, and other details of the financing, including decision as to when and how to buy. It is quite possible for all of the advantage gained by the buyer in taking up cotton and of the mill manager in selecting the proper types of cotton to be frittered away by inefficient pricing or financing. And the capable and honest buyer and treasurer will not only demand such differentiation for the purpose of showing where credit or censure is due, but for the purpose of preventing charges of dishonesty. There is no lack of opportunity for grafting in cotton buying and there is no lack of opportunity for dishonest operations in cotton hedging. However, temptation is present in all business transactions, and the fact that some cotton buyer has taken graft, or that some mill treasurer has speculated in cotton at the mill's expense for his own profit and charged the losses to the mill, are not logical arguments against giving the mill treas-

(*Continued on page* 325)

Prosecution of Cooperative Efforts Outstanding Feature in Cotton Goods

Adapting Production to Demand Through Work of Institute—Profits on Advancing Markets

THAT the cotton goods market is entering upon a year which will be marked by good conservative business is indicated by the moderately optimistic forecasts of the leaders of the industry. No longer do we greet the new year with wild impulsive prophecies of exceptional achievements and then sit back to pray that something will happen to uphold these early statements. In the first place, boom conditions are not wanted with the inevitable periods of depression following; and in the second place, forecasts are no longer hollow phrases but are deductions based on sound observations and reasoning.

Industrial leaders all over the country sound the note that 1928 will find the country more nearly adjusted to the ideal economic basis than it has been at any time since the war. Industry is taking great steps toward adapting production to demand, with cotton goods manufacturers leading the textile field in this regard by unified effort through the medium of The Cotton-Textile Institute. A day of cooperation which merchants have never witnessed before is at hand and is bound to work to the benefit, not only of the cotton goods market, but of other lines of business which it will inspire to similar action. This is undoubtedly the biggest feature of the market and one upon which much has rightfully been said with probabilities of many remarks in store for the future as further developments take place.

Increasing activity reported in nearly all of the major industries augurs well for cotton goods because of the increased buying power that is produced. Perhaps the new life in the automobile industry after a long period of dullness is of paramount interest to cotton goods men, not alone because of buying power set up by re-employment of well paid operatives, but also due to the enormous amounts of cottons absorbed in the manufacture of cars, tires and accessories.

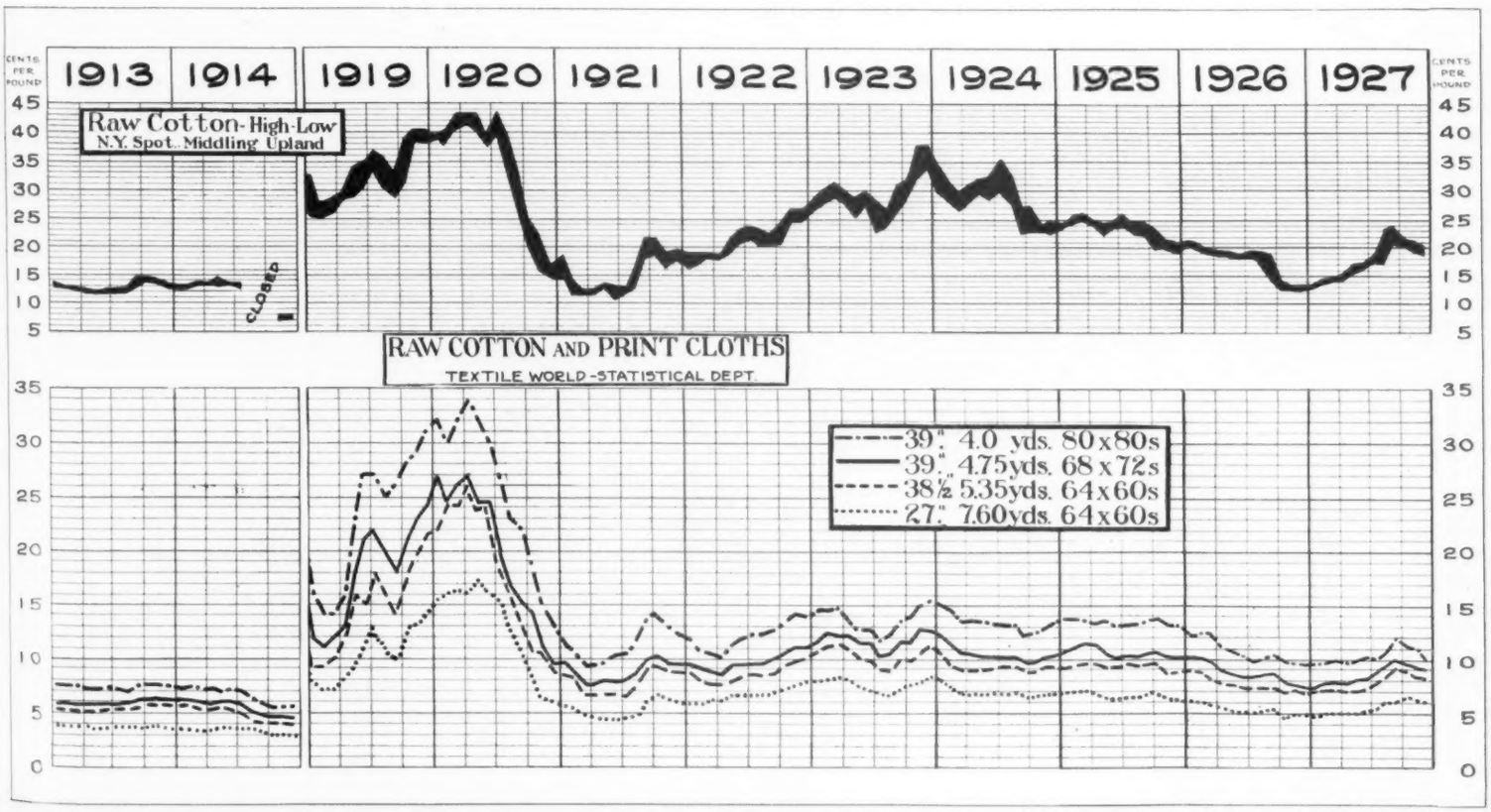
Export gains in cotton goods during 1928 are expected to overshadow any other year. Merchants are well aware of the fact that this country supplies less than 5% of the imports of some of the largest foreign markets. With our productive capacity in excess of domestic demand these foreign outlets hold out great promise to manufacturers who are endeavoring to snare a larger percentage of this business in order to establish a demand more nearly satisfying their capacity. That they stand good chances of being successful is evidenced by increased exports of 1927 over the previous year, estimated at between 8 and 9%. Economic conditions all over the world are reported as continually improving with less internal strife in foreign countries and fewer differences between nations than have been reported for years, all of which lends tone to better foreign markets pointing to larger exports from this country than in any past year.

With economic conditions in this country and the world at large showing steady improvement, and with sound basic conditions existing throughout all major industries, there is every reason to believe the cotton goods market will find steadily improving business bringing prosperity in its wake, with 1928 showing appreciable gains over 1927 when the count is taken at the year-end.

Institute's Development

An outstanding feature of the year has been the increased growth and the remarkable accomplishments of The Cotton-Textile Institute. At the annual meeting in October, 29 new members representing 932,084 spindles were admitted to membership in the organization whose members now represent over two-thirds of the active spindles in the entire country. Extended growth is assured during the present year as manufacturers who have been skeptical as to the possibilities of the organization realize the splendid work it has done, and is doing, to bring about ideal conditions in the industry.

The work of the Institute was decidedly felt during the last few months of 1927, when manufacturers were intent on operating at a capacity rate, stimulated by large sales at good profits during the preceding six months. Buyers had covered their needs well ahead and uncertainty that raw cotton prices would maintain the high level reached in September halted further buying movements. The market was on its way to be flooded with merchandise but statistics were distributed to manufacturers for guidance toward commonsense operations. Group meetings were held among mill men in the various sections of the industry showing tendencies toward over-production. Curtailment was agreed upon in every instance as the only sane method of preventing a crisis and establishing confidence in the stability of the market. This action was a large factor in starting the buying movement which got under



The UNSEEN STAFF

TODAY, an unseen staff — the consuming public — directs the course of progressive industrial establishments.

Executives plan, and operating forces produce. But, first, they bow to the dictates of the unseen staff. What the consumer will think of the product is the starting point of production.

In the textile industry it is what the women think that decides the product. To anticipate their decision Pacific Mills established The Work Shop as a special unit of the Pacific organization. The Shop was created to see fabrics the way women see them.

With the modern woman style is all important. So The Work Shop is devoted to the style testing of fabrics. It takes new fabrics from the Pacific lines and gives practical demonstration of their adaptability to the advanced fashions. It also experiments to find new uses to which the fabrics may be applied.

As research and experimentation in manufacturing processes give exceptionally high quality to Pacific products, so do the Style Bureau and The Work Shop assure style leadership to Pacific fabrics.

In these ways Pacific is meeting the wishes of the unseen staff — the women who buy and use textile fabrics.

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way in the gray goods market during the latter weeks of December, causing prices to firm up and ushering in the new year with a steady, broadening cotton goods market.

This is only one instance of the good work being carried on by the Institute in aiding the industry in preventing an over-produced market and its attendant demoralizing effect on prices. The encouragement of uniform and properly applied cost accounting systems in mills whose lack of knowledge of actual costs often causes unfair competition, is being pushed as fast as possible with many obstacles yet to be overcome.

The work of increasing the demand for cotton goods in extending the present uses and developing new uses is moving forward steadily as increased data are collected.

Conferences have been held with many distributing agencies to promote better understanding among the different factors concerned with the profitable distribution of cotton goods, all of which leads to cooperation which is the keynote of the Institute's operations.

Record Business

In January of last year the stage was set for exceptional business, and highly optimistic forecasts were made and were realized. For several months, buying had been about at a standstill; goods prices were at extremely low levels and due to a phenomenal cotton crop the price of the raw material was nearly at pre-war levels. Buyers viewed the situation and, noting the tendency toward advancing prices in the raw material, realized goods prices were at rock-bottom and proceeded to act, making last January the biggest month in the history of the business.

Progress was made during the first six months of the year with prices rising steadily under the influence of an advancing raw cotton market. No material price advances were made until late in the summer when talk of an unusually short crop sent prices of raw material and cloth up to levels which earlier in the year no one would have thought possible. A considerable amount of buying at this time encouraged firmer prices and mill men enthusiastically turned out yardage through July, August and early September there was a noticeable upward trend in prices reaching a peak in the middle of September, when cotton broke after reports showed talk of cotton scarcity was unfounded.

Quiet Period

Gray goods prices eased off fractionally until the middle of October when larger price concessions were offered in an endeavor to get business. Buyers had their immediate needs pretty well covered and were willing to await the final outcome of fluctuations in raw cotton as it affected the price of gray goods. Quiet prevailed in trading through the latter part of October and November while talk of over-production added itself to unstable cotton in keeping buyers away. However, early in December mill curtailment, which had been talked of for some time, became a reality and about the same time cotton became fairly stablized, with the result that the last half of December found buyers with confidence to place their orders. Prices became firmer and a broadening movement was noticed as the year ended with the cotton goods market in a position auguring well for future developments.

Mills Profit

That mills made money during 1927, many showing profits for the first time in years, is acclaimed by merchants as a most prominent feature of the market. Supplied with an abundant amount of cheap cotton, manufacturers found their productions bringing in good returns as cloth prices steadily followed an upward trend in accord with the rising raw material until the peak was reached in the middle of September, when gray goods receded to some extent but colored goods continued to hold to the higher level.

Mills that had foresight to place in storage a liberal supply of raw cotton when it was selling at a low figure were particularly fortunate in showing profits of a sizable nature during the year. There have been reports that some manufacturers bought enough cheap cotton to last them for two or three years under normal operating conditions. These manufacturers may be considered in a very fortunate position.

Movement of Gray Goods

In the gray goods market there was a steady advance for the first nine and one-half months of the year. This was followed by a gradual decline for the following two months with a slight advance during the final half month of the year. The last upward movement proved interesting as it gave an outlook for continued firmness during the first part of 1928.

Taking the course of 64 x 60s as an index of the market trend in gray goods during the year, the steady rise from 6¾c on the first of January, to 9¼c in the middle of September is an interesting indication of the market's strength. From mid-September until mid-December a gradual decline to 7¾c was experienced. During the last half of the month leading up to the present year the market regained some of the loss acquired during the previous two months, ending the year at 8⅛c.

It is interesting to note that the general trend of the year was one of improvement, for never once did the market fall below the low of the year which was its starting point.

Sales of gray goods for the year were in excess of those made during 1926 and while it is impossible for anyone to state definitely that 1928 will show further increases over last year, nevertheless general conditions of the market point toward improvement during the next 12 months.

Finished Goods

The total volume of finished goods sold during the year was considerably above that of the previous year. Prices advanced steadily from January until the year-end following the trend of cotton but the increases were relatively nowhere near as great as those in the raw material. Competition kept prices down on many lines of finished goods, especially ginghams, bleached goods, ducks, and wide sheetings. Mills with foresight in laying aside a large supply of cotton when it was cheap were fortunate in making a profit, while those who had to replenish their supply during the year found the margin between cotton and goods too close to be profitable.

A notable feature of the year was the large sales of printed goods with more emphasis being placed on higher grade goods than ever before.

At the close of the year stocks on hand among mills producing colored goods were considered to be cleaner than has ever been the case in previous years. Stocks in the hands of wholesalers and the cutting-up trade were reported to be low in almost all quarters. The healthy condition of the finished goods market brought about by clean stocks in all hands augurs well for improved business during the new year.

Dealing with Style

Style trends have been increasingly important this year in their effect on cotton dress goods. More time and thought are being given toward development of new and attractive cotton dress fabrics and to the promotion and distribution of this class of goods. Attractive patterns in neat effects have been introduced in order to catch the eye and re-establish a larger place for cotton dresses in women's wardrobes. Rayon has been used extensively in producing new ideas for dress goods and rayon-filled and striped rayon fabrics have taken a leading place in dress goods department. Cooperation between the piece goods departments and fashion service bureaus of retail stores is being used to stimulate sales of cotton dress goods. When a woman buys piece goods the fashion service is there to advise and aid her in satisfactorily converting the material into a well-styled serviceable garment.

Fashion shows have been given during the year with cotton and cotton-rayon dresses being shown exclusively to further promote the sales of the dress manufacturer's productions. One large mill selling agency in New York City made an innovation and created much favorable comment by officially opening its renovated and enlarged selling offices with a style show at which dresses displayed on mannikins showed the mills latest offerings in dress goods. Such promotion ideas should work beneficial results during the coming seasons. Manufacturers realize that the importance of style makes quality secondary but a combination of the two with suitable promotion work to aid in distribution of the product is meeting with good results which spell greater success for the future.

During the year problems of distribution have been up for considerable discussion and it is felt that due to cooperative methods in dealing with these problems much has been accomplished toward paving the way for a better understanding between the primary market factors concerned with selling the manufacturers' output, and the wholesalers.

Manufacturing organizations have been at odds with the jobber for some time, ever since hand-to-mouth buying has restrained the wholesaler from placing enough forward business to supply manufacturing needs for proper operating schedules. This year commission houses have realized more than ever that the wholesaler occupies a definite place among the factors concerned with the distribution of cotton goods. The large majority of merchants have become convinced that none of the new plans designed to sell direct to the retailer, eliminating the jobber entirely, can successfully compete with existing wholesale organizations.

One of the most frequently repeated complaints heard against the wholesaler is his negligence in marketing newly styled goods and novelties. The converters are loud in their abuse of the jobber and his slowness in promoting the sale of new goods. If the converter goes direct to the retailer with these products then the jobber complains that the former is usurping his offices. This is one subject that will stand considerable ironing out and present plans of cooperation will undoubtedly smooth the way in the early months of the new year.

That better cooperative relations between mill selling agencies and wholesale organizations are becoming a reality, and are not just so much idle talk, is evidenced by the much better feeling around the market. The Association of Cotton Textile Merchants of New York has been doing constructive work for some time in helping to solve these problems identified with the distribution of cotton goods. The Cotton-Textile Institute is lending a strong hand in aiding efforts toward cooperation and is making a complete study of the situation in order to offer practical solutions to existing problems. In the middle of January a new organization is to be born composed of national wholesale organizations.

With all these powers working toward a definite end, that of better understanding and increased cooperation between the distributing factors of the industry, it would appear inevitable that many existing wrongs will be corrected during the present year.

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By W. J. Vereen

President, Moultrie (Ga.) Cotton Mills.

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No. 2 of a series

A Depressing Year in Lancashire

Difficulty in Competing with Other Countries for Foreign Markets

From Our Manchester (Eng.) Correspondent

TRADERS in Lancashire engaged in the cotton industry at the end of 1926 were full of hope that the industry during the next 12 months would experience a distinct revival after four to five years of severe depression. The optimism prevalent was largely due to the fact that prices for raw cotton were then on a lower level than for many years back. Spinners of yarn and makers of cloth were also prepared to accept orders at figures which in most instances either showed a loss or only just covered the cost of production. In the circumstances it was natural to anticipate that dealers throughout the world would be prepared to renew stocks which in many centers had become depleted.

At the beginning of 1927 the expectations were realized as during January and February there was an important buying movement in practically all sections of the market and the substantial contracts secured by producers enabled the industry as a whole to run longer hours than for some time back. It is a matter for regret, however, that before the end of March the more active demand had died away and although customers were prepared to receive deliveries against old contracts very few fresh orders were placed to follow on. Gradually the engagements of spinners and manufacturers began to run down and before the end of the summer pressure for new business began to show itself.

In considering the industry it must be remembered that the depression is almost entirely confined to the American section, that is to say spinning mills using American cotton and weaving sheds using yarns made from American cotton. In the Egyptian branch of the industry conditions all around are more favorable than a year ago, as at the end of 1926 numerous spinners were still feeling the effects of the coal strike. Manufacturers of cloth using Egyptian yarns have also had a fairly good year, although business has been somewhat irregular.

The position with regard to finance is worse than a year ago, and during the last month or two there has been increasing anxiety as to the future of many companies and firms. It is now recognized that whatever may be done in other directions quite a number of spinning mills will have to be reorganized.

The Cloth Market

It has been a discouraging year for manufacturers of piece goods. On very few occasions has the general demand been at all healthy and it has been exceedingly difficult for most producers to secure profitable prices. The depression has been most acute in plain materials, and it has been necessary for numerous firms to curtail output on a large scale. A fairly steady demand has been experienced in fine fabrics and fancies and many makers of such goods have done fairly well.

According to the Board of Trade returns our foreign trade has been slightly better than in 1926. There was every expectation at the beginning of this year that owing to the lower values as a result of cheaper raw material our customers would be prepared to purchase on a much bigger scale, but such a development has not taken place.

There has again been considerable evidence of severe competition from other countries and merchants have stated that when buyers abroad have had orders to place, the inquiry has been sent to competitors in the first instance, and in many styles Lancashire appears to have obtained only those contracts which could not be placed with other countries.

The year opened with a big demand and an extensive buying movement took place during January and February. In March, however, the business began to taper off and since then there have only been isolated short periods of activity. In the circumstances it has been impossible for manufacturers to run all their machinery at full stretch. Production last January was about 65% of full time. Owing to the larger business done output was increased by the end of March to about 80%. Since then there has been a tendency for order lists to run down and less machinery to be worked, and during the latter half of the year production has been between 65 and 70%.

India Demand Irregular

The total volume of trade done with India has not shown any marked change. As in previous years buyers abroad have operated more freely from time to time, but generally they have waited for makers to get into a very bad position and be prepared to accept wretched prices. Buying movements have been of comparatively short duration as immediately sellers have strengthened their position and held out for more profitable rates the demand has fallen off. From a political point of view it can scarcely be said that India has been more unsettled than usual. It is a matter for regret, however, that dealers in the bazaars have not been able to take full advantage of the occasion at the beginning of 1927 when it was possible to purchase goods on a very low basis. It was anticipated that the heavy buying which then occurred would result in dealers in the bazaars making substantial profits and thereby paving the way for a continuance of healthy trade. It is understood, however, that by the middle of the year, when values in the raw material had advanced considerably, it was extremely difficult for distributors to secure reasonable advances.

Of course, during the last few months makers in Lancashire have held out for higher figures, but these have been much above the prices ruling in the bazaars and in the circumstances it has been extremely difficult for traders to arrange for replacements. Matters in this connection will be adjusted in due course, but there is much evidence for the opinion that when rates for manufactured goods go beyond a certain point there is a definite restriction of consumption and trade of weight cannot be done.

Once again the chief demand has been in the lighter qualities of bleaching goods and now and again a substantial turnover has taken place in dhooties, mulls, jaconets and nainsooks, yet it cannot be said that makers of such fabrics in Lancashire have had a good year. On the other hand the off-take in sized shirtings has been decidedly poor, most of the offers being considerably below the requirements of sellers. It is quite evident a large part of this trade which only a few years ago was the staple business has now been lost and increasing quantities of gray shirtings are now being produced in the mills of India and also imported from Japan.

From month to month a fairly healthy demand has been experienced in fine goods and fancies, there being an encouraging turnover in printing and finishing styles. A feature of interest has been the increased activity in artificial silk mixtures and India is now consuming much bigger quantities of artificial silk than a year or two ago. It may be said that on the whole Lancashire is maintaining her trade fairly well so far as specialties are concerned, but bulk business in the coarser and commoner goods remains on a much smaller scale than in pre-war days.

Certain figures relating to Indian trade are striking and indicate very clearly the course of events. For instance in the 12 months ended March 31, 1913, the imports of cotton goods into India were 3,023,000,000 yds. Of this total the United Kingdom sent 2,942,000,000 and Japan only 6,000,000, the production of the Indian mills in that year being 1,220,000,000 yds. In the year ending March 31, 1927, however, the total imports had fallen to 1,767,000,000 yds., of which the United Kingdom provided 1,467,000,000 yds., and Japan 244,000,000 yds., the production of the Indian mills having advanced to 2,259,000,000 yds. These figures speak for themselves and show very clearly the trend of events.

Compared with 1926 the business done with Bombay has shown some increase, but there has been a falling off in the shipments from this country to Calcutta. Not much change has shown itself in the position of Madras and Karachi.

During the year the Government of India has passed legislation designed to give some measure of protection to the cotton industry. No additional duty has been imposed on imported cotton goods, but it has been decided to assist the local spinning mills by imposing on imported yarn a duty of 1½ annas per lb. or 5% ad valorem, whichever is the greater, instead of the previous duty of 5% ad valorem. It is expected that this protection will benefit those classes of yarn which India produces in the largest quantities. It may also be mentioned that the duty on artificial silk yarn has been reduced from 15% to 7½%, this proposal being to assist the hand loom industry.

Chaos in Far East

There has not been the slightest indication of a larger trade for China. In fact shipments of cloth from the United Kingdom during 1927 have been decidedly small and much less than in the previous year. On certain occasions it has been necessary to suspend the auction sales in Shanghai and as a point of interest it may be mentioned that a leading firm of English merchants who have conducted auctions on Wednesday each week for a long number of years back have abandoned their sales altogether. At the other auctions merchants have been compelled to offer only limited quantities and the off-take has been discouraging. The prices ruling have also been very poor, and in the circumstances merchants have not been in the mood to import anything more than retail lots, the bulk of the buying being in fancies and specialties.

There is some difference of opinion as to whether the decline in our trade with China is altogether due to the unsettled political situation. It must be recognized that during the last few years the imports from Japan have increased considerably and according to some authorities Japanese merchants have now become a much more important factor in the trade of Shanghai. The fact remains that owing to the unsettled position of affairs and the fears of brigandage it is still impossible to send supplies of goods to the up-country districts and so far as the big Far Eastern market is concerned trade is restricted to a comparatively small radius of the chief towns.

Smaller Markets

Although a fair miscellaneous business has been done from month to month for numerous minor outlets East and West, the buying has not been of a healthy character, and manufacturers who cater more particularly for the smaller markets have not been able to give out reports of a cheerful nature. There has been some improvement in the shipments to Egypt and the Near East, but early in the year most of those outlets bought rather heavily and became congested. It has taken many months to reduce supplies and it is reported that traders have not met with satisfactory clearances.

Probably the healthiest outlet for Lancashire cloths has been the Continent of Europe and in this connection particular reference can be made to the larger exports to Switzerland, especially in printing and finishing styles. It is understood that large quantities of these goods have not

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been consumed in Switzerland, but they have there received finishing processes and have been despatched to different markets of the world. This factor in the situation goes to prove that it is cheaper to get cloth finished and dyed in European countries than in Great Britain. Larger shipments have also taken place to Germany and an increased trade has been done with Iraq and the Netherlands. There has not been any general flow of business for the outlets of South America and numerous manufacturers have complained of the impracticable bids from that part of the world. There is a tendency to lose trade with the Argentine Republic and Brazil and to some extent this is due to the larger production of goods in those countries. There has been a continuance of the improved demand of recent years for the British Dominions and in this connection the shipments to Australia stand out prominently. Some improvement has also shown itself in the takings of Canada.

Demand for African markets has also been rather healthier although business must be described as somewhat irregular. Our trade with the United States does not call for any special comment, but business in fine goods keeps up fairly well.

The Home Trade

Partly owing to a more settled industrial situation it has been a rather better year in the home trade. Retailers and distributors of goods have also derived considerable benefit from the appreciation in the value of stocks since the beginning of 1927. The experience of the different departments has been somewhat varied and, considering the depression in the heavy industries of the country, the purchasing power of the public has been fairly good. Certain houses were rather adversely affected during the summer by the unseasonable weather and cases were mentioned of rather heavy stocks of light fancy materials being left on the hands of the wholesale houses and the big shops.

There has been no slackening in the efforts of manufacturers, calico printers and dyers to provide a greater variety of designs in cotton materials, and undoubtedly compared with a few years ago a big forward movement in this connection has taken place.

A considerable amount of unemployment has existed in the chief weaving towns of Lancashire. In the Burnley district where there are about 100,000 looms it has been quite impossible for manufacturers to find sufficient work for all the operatives. A similar state of affairs has shown itself in Blackburn, another big manufacturing centre. On the whole conditions in Preston, Nelson and Colne have been rather better than in the districts where plain materials are produced.

The following table gives the exports of cotton cloth from Great Britain for the 12 months ended December in the three years 1913, 1926 and 1927:

	Yards	£
1913.....	7,075,252,000	97,775,855
	Square Yards	
1926.....	3,834,447,700	116,052,586
1927.....	4,117,683,000	109,995,715

The following is a list of cloth quotations on particular dates during the past twelve months:

1927	32 in. Printers 116 yds. 16 x 16 32's & 50's		36 in. Shirtings 76 yds. 19 x 19 32's & 40's		38 in. Shirtings 38 yds. 18 x 16 10 lb.		39 in. Shirtings 37½ yds. 16 x 15 8¼ lb.	
	s.	d.	s.	d.	s.	d.	s.	d.
Jan. 7.....	22	6	25	9	12	9	12	1½
Feb. 4.....	22	9	26	0	12	10½	12	3
Mar. 4.....	24	3	27	3	13	3	12	9
April 1.....	24	0	27	0	13	3	12	6
May 6.....	24	6	27	0	13	6	12	10½
June 3.....	26	0	28	0	14	3	13	4½
July 1.....	26	0	28	0	14	6	13	4½
Aug. 5.....	26	1½	28	9	15	0	13	9
Sept. 2.....	29	0	31	6	16	4½	15	4½
Oct. 7.....	28	3	30	3	16	3	14	9
Nov. 4.....	27	0	29	0	15	9	14	7½
Dec. 28.....	26	0	28	0	15	0	14	0

Depression in Spinning

The depression in the spinning section devoted to the production of yarns from American cotton has been as pronounced as in previous years and the situation as a whole can only be described as deplorable. Despite the fact that the mills have curtailed production on a large scale there have been very few occasions when spinners have been able to sell the limited output without incurring a serious loss.

At the end of 1926 the Masters' Federation made the important announcement that, owing to the inadequate support given by the members to the short time recommendations, it had been decided to withdraw all restrictions upon working hours and henceforward the members would be allowed to make their own arrangements as to production. It was also decided to abandon the basic prices scheme. Although there was no official announcement to this effect there is ground for believing that this action of the Federation meant a change of policy, the view being held that all control upon production and prices should be withdrawn so as to allow free competition between individual firms.

Early in 1927 demand broadened and spinners began to book orders on a free scale. This buying movement continued until the end of February. Spinners were then charged with putting up prices too quickly, but a large part of the trade done at the beginning of the year was at rates which showed a loss and producers could not be blamed for advancing prices when they obtained relief, and were in a position to present a stiffer front to customers. Business in March was much quieter and a little later the question of output was dealt with by the Cotton Yarn Association. During the latter half of the year the position for spinners has tended to become worse than ever, and many more cases have been mentioned of mills going into liquidation or under schemes of arrangement with loanholders and creditors.

In connection with the wretched state of affairs in the spinning section it may be pointed out that during the last year about 90 companies have made calls of unpaid share capital and these calls should realize when completed nearly £4,000,000. Also during the year 80 firms have gone into liquidation, comprising 10 spinners, 27 manufacturers, 4 spinners and manufacturers, 34 merchants, and 5 bleachers, etc. In addition 30 spinning companies have gone under schemes of arrangement.

There has been some irregularity in the experience of spinners of Egyptian yarns, but this branch has done decidedly better than the American section. Throughout the 12 months the mills have worked practically full time. Spinners of the finer counts have been more favorably situated than producers of the coarser numbers.

There has been considerable irregularity and a certain amount of weakness in the cotton mill share market. This unsatisfactory state of affairs has been party due to the many calls by spinning companies and shareholders have been compelled to sell their shares in some companies in order to pay the calls on other shares. On certain occasions the prices ruling have appeared to under-value the position, but throughout Lancashire there has been a scarcity of money and comparatively few opportunities of speculative purchasing. In the circumstances brokers have had another trying year and it is a long time since the share market was in such a depressed condition.

The following table gives our shipments of yarn for the twelve months ended December in the years 1913, 1926 and 1927:

	lb	£
1913.....	210,099,000	15,006,291
1926.....	168,543,200	21,783,800
1927.....	200,502,200	23,593,592

The following is a list of cotton and yarn quotations for the last 12 months:

1927	Spot Cotton Middling American in Liverpool	American Yarns 32's Twist	40's Weft	50's Weft	Spot Cotton F. G. Fair Sakellaridis Egyptian in Liverpool	Egyptian Yarn 60's Twist
	d.	d.	d.	d.	d.	d.
Jan. 7..	6.98	12	12¾	15	14.00	24
Feb. 4..	7.47	12¾	12¾	15¼	13.75	24
Mar. 4..	7.93	13½	14	15¾	13.95	25
April 1..	7.86	13	13½	16½	13.40	25
May 6..	8.75	13¾	14¼	16¾	15.80	26½
June 3..	9.23	15¼	16	18½	17.00	28
July 1..	9.11	15	16	18¼	16.95	27½
Aug. 5..	9.47	15½	16¾	18¼	18.50	28½
Sept. 2..	12.34	18¼	19½	21½	27.00	31
Oct. 7..	11.72	17¾	18½	21	19.30	30
Nov. 4..	11.75	16¾	17½	20¼	18.80	29½
Dec. 28..	11.05	15½	16¼	18¾	17.70	27½

Prospects

It is useless to disguise the fact that in Lancashire trade circles at the present time there is a feeling of pronounced pessimism. A year ago, prices for raw cotton were very low and producers of yarn and cloth were prepared to accept cheap rates. In the circumstances there was every expectation of a buying movement of volume which would be maintained. It must be admitted, however, that such a development has not taken place as after free operations for a couple of months the requirements of customers appeared to be satisfied.

During the last year the most determined effort to deal with the depression has been made since the bad times began to show themselves in 1920. The failure of the attempt of the Cotton Yarn Association to establish minimum prices and regulate production has resulted in a feeling of despair. Traders, however, are learning by experience and undoubtedly there is evidence for the statement that trade in Lancashire was held up during the time the Yarn Association functioned owing to the belief on the part of customers that Lancashire spinners were united in order to extract unreasonable prices for their products.

The attention of the leaders of the industry is now being centered on a comparison of production costs before the war and at the present time. Particulars are also being obtained of the overhead charges of competitors in other countries. It is being recognized more fully that the lost trade of Lancashire will not be regained until producers are in a position to place goods in markets abroad at prices which are distinctly competitive.

Trade prospects in India may be considered fairly healthy. During the last few weeks more business has been done and there is plenty of evidence for the belief that stocks in the hands of dealers are comparatively low. It is reasonable to anticipate a continuance of the increased activity, but it remains to be seen how soon dealers will have satisfied their wants. It cannot be said that there is much hope of important trade developments in China just at present, yet that great country should at some future date provide an extensive and increasing demand. Conditions in Egypt and the Near East are more satisfactory than a few months ago and merchants with connections in South America have recently received more favorable advices as to the general outlook.

The prospects for spinners of American yarns cannot be considered without some misgivings. It is difficult to see how quite a number of companies can be saved from bankruptcy. Their finances are in such a position that it seems hopeless to anticipate any development which can lift them out of the troubles which now exist. On the other hand spinners of Egyptian yarns, after having a fairly good year, seem likely to maintain their position which is by no means unsatisfactory.

There is no fear of any shortage of raw cotton. It is true that the crop in the United States for this season at 13,000,000 bales will be 5,000,000 bales smaller than in 1926-7, but owing to the substantial carryover at the end of last July world supplies are over 20,000,000 bales. It is too early for anything to be said as to the prospects for next season in the United States. Unless there is a decided fall in values a fair increase in the acreage next spring may be experienced, and the ultimate output will depend, of course, upon the weather during the growing season.

Lancashire traders as a body are not entering the year 1928 in a very hopeful mood. It is feared that from the point of view of finance a good deal of "squaring up" has still to take place. Competition from other countries is more severe than ever known before and it is realized that many difficulties will be met with in reducing production costs and overhead charges.

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For the Wholesale, Converting and Cutting-up Trade

Carded Yarn Trading More Stabilized by Agreement Between Spinners and Dealers

Adoption of Code of Practices Dominant Feature of Moderate Year

CONDITIONS surrounding the cotton yarn market with the opening of the current year are decidedly different from those which ushered in 1927. First and foremost, prices are on a substantially higher basis, being anywhere from 8 to 9c above the level of January, 1927. Similar comparative prices apply to raw cotton, which at the beginning of the year was in the neighborhood of 13c, while today it is 19½c. The advance in raw material and in yarns has not been the only change differentiating the two periods. The market today and for the last two or three months has been on a more stable basis than in a long time. Not that there have been no irregularities, but there has not been the demoralization which characterized yarn dealing so many times in the past. It probably may be said without fear of contradition that this difference is the outstanding characteristic in trade in carded yarns for the year 1927, while it gives evidence of continuance during the months to come.

Experience Affects Yarn Houses

A period of speculative losses, with little evidence of any change toward more stable conditions, if current practices were to be continued, led many selling houses to alter their attitude toward merchandising of carded yarns early last year. The lack of profit resulting from purchase of yarns and the holding of same for an expected profit led many leaders in the market to a decision against such method of operations. Certainly the most important concerns in New York and Philadelphia particularly resolved to stop speculative dealing, even though it meant a decided restriction of their business. It is believed this decision has proved beneficial in a great majority of instances and that the year just closed, although possibly not recording a record volume of business done, will show to better advantage on the books of selling houses than in a number of years. This improvement can be attributed almost entirely to the withdrawal from the speculative field and the resolve to conduct a purely mercantile course of operations.

Establishment of Agreement

It was this change in the method of operations by an increasing number of houses which led primarily to a consideration of a workable basis for the entire carded yarn trade. It was resolved that spinners and yarn houses could get together on a form of trading which should eliminate much of the speculative element and allow both the spinner and the dealer to develop business on saner foundations and with more assurance of a profit. As a consequence, conferences of spinners through the Cotton Textile Institute and of the Cotton Yarn Merchants Association were held and finally an agreement was formulated to which both spinners and dealers were parties, setting forth a series of rules regulating the sale of carded yarns to the consumer. The adoption of what is known as "The Code of Carded Yarn Trade Practices" marked the beginning of a new era in the trade which, while it has had its difficulties to surmount, and many complications to overcome, is generally regarded as establishing a basis which should lead to improvement for all concerned. The various provisions of this code follow:

"It is a sound practice for a particular mill either (1) to make sales direct to manufacturing consumers or (2) to confine its accounts to one commission house for any given territory, or to work out a consistent combination of these two methods.

"It is not a sound trade practice for either a particular mill or any agent acting for it to quote at the same time different prices to different inquirers for the same yarn.

"It is not a sound trade practice for a mill to pay either directly or indirectly any compensation for selling other than not exceeding the usual 5% to commission houses and yarn merchants and not exceeding the usual 2% to brokers, nor to allow any cash discount exceeding the usual 3% for warp yarns or 2% for soft yarns for 10 days. But in case of direct sales it is a sound practice to allow the usual discount not exceeding 3% on warp yarns or 2% on soft yarns for 30 days, but no discrimination or secret rebates by way of other discounts, commission, compensation or inducement. It is not a sound trade practice to share commissions either directly or indirectly with purchasers of yarns.

"For purposes of this statement of "Sound Trade Practices" a "Commission House" is one that handles yarn for confined accounts on strictly commission basis, rendering account sales for all transactions.

"Yarn Merchant" is a house that buys and sells yarn by simultaneous purchase and sale at the same price.

"It is sound practice for a particular house to function as a "Commission House" and also as a "Yarn Merchant".

"It is sound practice for a commission house or yarn merchant to undertake in consideration of the commission paid it, to give its mills selling advice and to dispose of their products at the best obtainable prices."

"Short selling and long buying on the part of commission house or yarn merchant are unsound trade practices."

"The accumulation of stocks on the part of commission merchants, being speculative in principle and consequently to the disadvantage of both producers and consumers, is an unsound trade practice and should be eliminated by October 1, 1927."

This document was signed by representatives of the Cotton Yarn Merchants Assn. and of the Carded Yarn Group committee of the Cotton Textile Institute and by the secretary of the latter organization.

Progress of Agreement

With the consent of a large proportion of carded yarn spinners to the principles involved in the agreement and with unanimous approval of the Cotton Yarn Merchants Assn. who have regarded acceptance of the code as a necessity for menbership, the agreement started on a substantial basis and has shown marked progress with succeeding months. It must be admitted there have been criticisms of the provisions of the agreement and that violations have been reported by both spinners and yarn merchants. Indeed, at one time it looked as though the continuance of the agreement was decidedly doubtful and many expressed discouragement at the outlook. Within the last two or three months, however, there has been a renewed allegiance to the terms of the agreement and less criticism because of a decreased number of violations. It is contended that ever since the agreement was put into force reports of irregularities, both by spinners and dealers, have been exaggerated, coming in large part from outsiders who were not in full sympathy with the proposed change in methods because of the possible effect upon their own particular business.

New Method Justified

The fact that practically no change has been found necessary in the details of the agreement is justification in itself of the soundness of the principles enunciated. The only modification which has been made in the original document has to do with the handling of consigned yarns which have been allowed to occupy the place of stock yarns as formerly considered. It was appreciated that the absence of yarns for immediate delivery would work a hardship not only upon the seller but also upon the buyer, both of whom had been in the habit of handling such available material as was necessary for the conduct of their business. Outside of the fact that in instances stock yarns, bought for the dealer's account before the agreement was formulated, were not disposed of on the stipulated date, supplies in dealers' hands have been of little consequence. There has been a certain amount of consigned yarn which has been allowed under the agreement, but this has been discouraged and spinners have not seen much possibility of profit in consigning their output as long as they were obliged to pay carrying and cartage charges. It has meant that in instances buyers have been compelled to anticipate their requirements to a greater extent than formerly and in this respect it has worked out as was intended.

Trend Toward Controlled Accounts

Probably the most conspicuous result of the merchandising arrangement has been the increased tendency toward placing the control of accounts in the hands of reputable houses. The indiscriminate sale of yarn to dealers, depending upon the price offered, was regarded by those who studied the situation as one of the uneconomic features of the trade, and it was felt that both spinners and merchants would benefit by the increased confidence which would be engendered as a result of placing the sale of a mill's product with a specific house and allowing that house to exercise its judgment as to the proper time for its sale. It will undoubtedly take a long time before this procedure becomes anything like universal. It is realized it is difficult at times to discover a house that is capable of handling properly and profitably the entire product of specific mills, while on the other hand, there are a good many small mills, the details of whose business the average yarn house would not undertake. Nevertheless, as stated above, the trend is in this line and the year 1928 is likely to see further important developments in this direction.

Possibilities of Mergers

During the last few months considerable has been heard and written about an attempt to merge southern yarn mills through outright purchase. This movement is under way and success may crown the efforts of those engaged in the project. Whether a sufficient number of plants satisfactory to the bankers involved in the proposition and at a level of price which will be considered feasible both by the spinners and by the heads of the merger can be brought together under one management remains to be seen. It has been declared that an aggregate of 150 mills forming a $50,000,000 corporation was the desideratum. It is agreed that in principle the idea of the merger is an excellent one for the best interest of the

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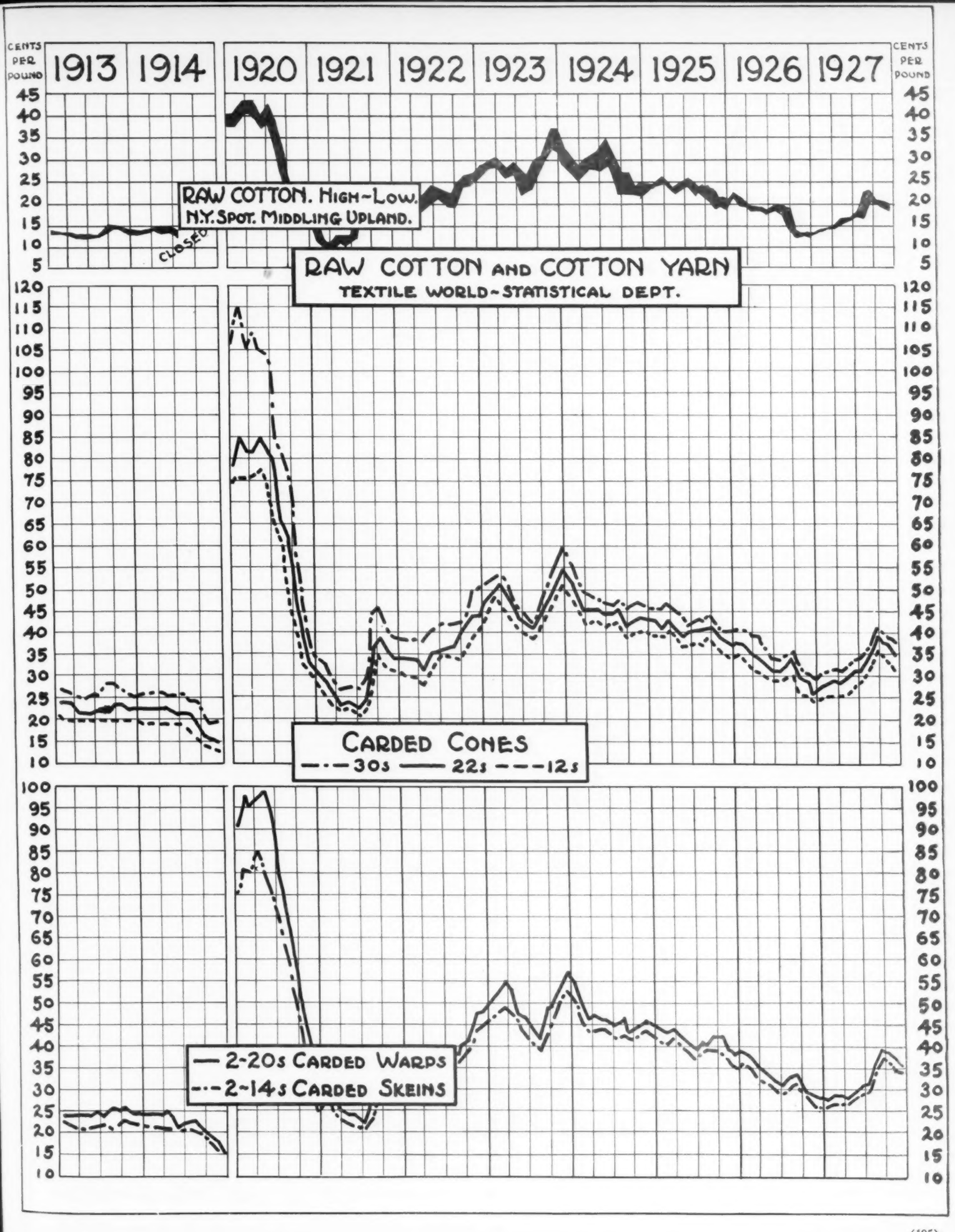

CENTS PER POUND
1913
1914
1920
1921
1922
1923
1924
1925
1926
1927
CENTS PER POUND
RAW COTTON. HIGH-LOW.
N.Y. SPOT. MIDDLING UPLAND.
CLOSED
RAW COTTON AND COTTON YARN
TEXTILE WORLD-STATISTICAL DEPT.
CARDED CONES
30s
22s
12s
2-20s CARDED WARPS
2-14s CARDED SKEINS

CANNON MILLS

INCORPORATED

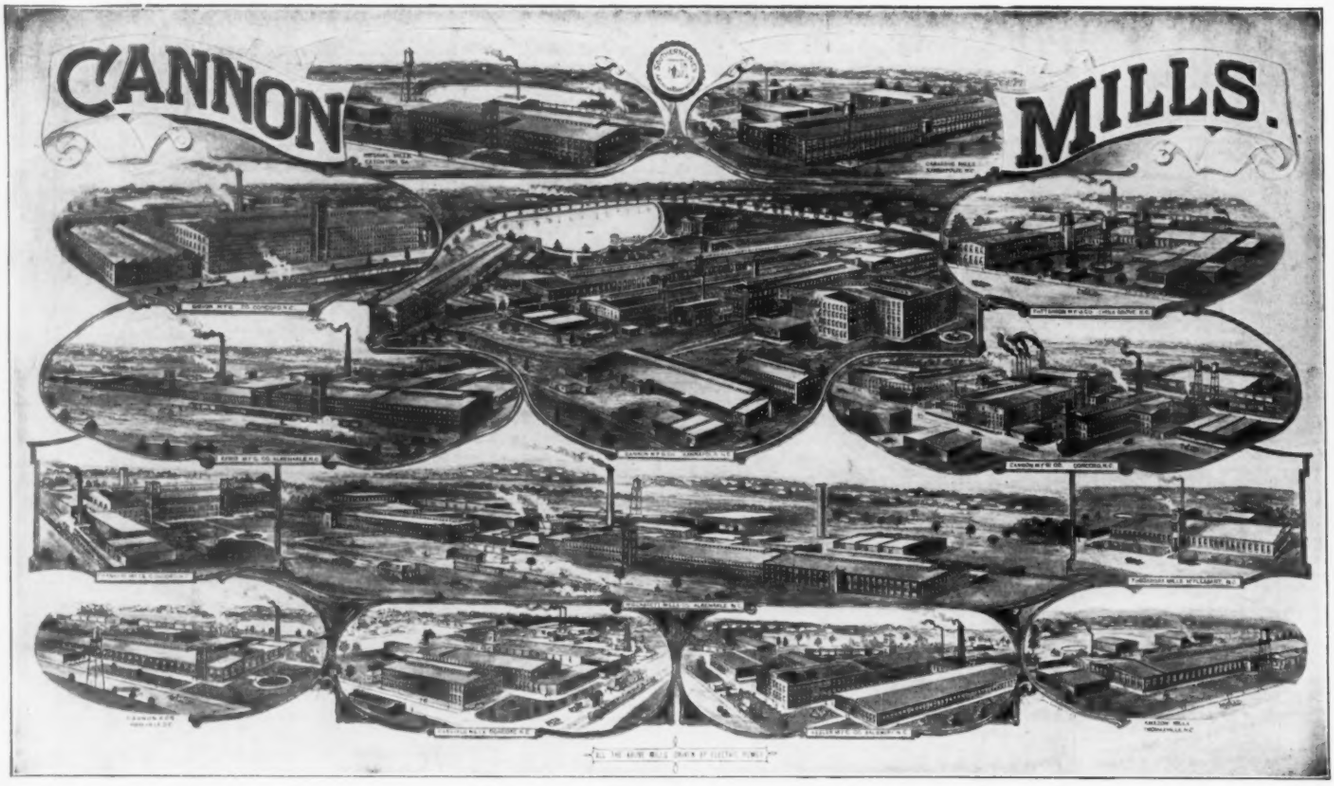
Knitting and Weaving

Combed and Carded

COTTON YARNS

Cones, Tubes, Skeins, Warps, Single and Ply, White and Colored

"From Spinner Direct to Manufacturer"



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market, but it is further contended that its success will depend upon the character of the plants which eventually are included in the combination. The feeling is prevalent that such a merger may be finally brought about, but modifications in number and in terms will, it is expected, be witnessed before the final consummation of the proposition.

Consuming Trades Generally Slow

The movement of cotton yarn naturally depends upon the activity of the consumer of this material. If the latter experiences a restricted demand for his product with the outlook uncertain, his operations are bound to be affected. There is practically no division of the yarn consuming trade which has not had a more or less unsatisfactory year. This has led to ultra-conservatism and the elimination of any disposition to anticipate requirements. This is particularly true of the buyers of weaving yarns. In almost every instance the volume of business done by the manufacturing consumer has been restricted. Large blocks of yarn formerly taken covering protracted periods of delivery have been conspicuous by their absence. Manufacturers of towels, webbing, carpet, plush, etc., have complained throughout the year of inability to operate their plants to capacity, which has necessitated the purchase of yarn on a retail basis. Not only has the volume of their business been curtailed, but also the margin of profit has been lessened. The consequence has been constant effort to secure yarns at a lower level with the necessity on the part of the dealer for unusually skillful arguments in order to maintain prices. These difficulties have been increased under the new method of marketing, as there has not been the latitude which obtained when the yarn dealer owned his own stock of yarns and could arbitrarily name a price that he felt would be attractive to the buyer. Today prices are based practically on the spinner's quotation and these must be obtained or the sale lost. Increased detail is involved, as the offer must be accepted or refused, based upon the decision of the spinner with whom the yarn merchant must be in much closer contact than under conditions which prevailed before the agreement was formulated. On the other hand, much detail and uncertainty have been eliminated from the dealers' methods as there is not the constant necessity for decision as to whether to sell or not. This burden has been transferred to the spinner in large part.

Electrical Wire Trade Declines

During the early part of the year the electrical trade formed a very conspicuous part of the sales consummated. Many times this business constituted practically the bulk of transactions which were possible. With the falling off of building activity the effect upon the electrical wire trade was natural. Instead of buying ahead as was the habit of this division, operations during the last few months have been confined to comparatively restricted delivery. Also it has been noted that a change in the methods of purchase by the wire trade has been steadily developing. Today the majority of the yarn bought for this division of the consuming industry is purchased direct from the spinner rather than through yarn houses.

The restriction in building operations has also caused a narrowing of the market for the same counts as were formerly in demand. Buyers are becoming more and more careful about the quality of the yarn which they purchase and this is particularly true of the electrical trade. It has reached the point where many refuse to deal with this class of buyer because of the specifications demanded and which are difficult to meet. A good many houses have had disastrous experiences with yarn sold to this trade which has been thrown back on their hands through non-compliance with details that have been regarded as unnecessary. It has also been found advisable to modify certain specifications, in order to secure the volume of yarn required.

Knitting Trade Disappointing

The knitter has lived up to his reputation of being a difficult customer to deal with. It has been a buyers' market very largely during the year and the knitter has taken full advantage of the ability to hold the whip hand. He has played one house against another and has so successfully remained out of the market that he has been able to depress prices to his own advantage. With the opening of lines for another heavyweight season he is pursuing the same tactics. He has refused almost up to date to take a specific stand on the market and has used dips in the cotton price situation to justify his attitude. It is known that comparatively few have anything but a meagre supply of yarn for the coming season, but the majority are contending that the advance on their product has not been sufficient to justify paying the increase which the spinner demands. The latter has taken a very firm position on prices, declaring his determination to sell nothing unless he can secure replacement costs based on the level of cotton at the time of sale. This the buyer claims he will not agree to, with the consequence that there is a deadlock. It remains to be seen which side can hold out the longer, although it is feared that unless more evidence of activity is witnessed in the near future there will be instances of weakness on the part of spinners which will be to the advantage of the knitter. Advance business on heavyweight underwear has not been as great as expected, while irregularities and adjustments have been made on certain lines which have been opened. This naturally reduces the profit of the manufacturer and will make him all the more conservative in his relation to the yarn market.

Curtailment an Influence

Although buyers are unwilling to admit it, the volume of curtailment among southern yarn mills has already had a strengthening effect upon the situation and is likely to give evidence of increasing influence as time goes on. Beginning before the holidays a very fair proportion of southern spinners began a schedule of short time operations. The majority closed their plants from Thursday night until Monday morning and others a percentage of this period. Also night work has been decreased to a substantial degree and this schedule will doubtless continue until sufficient improvement in demand warrants a return to former full time operations. With an absence of accumulated stocks and the determination to secure a fair profit, the buyer's likelihood of securing concessions in the near future does not seem to be very great. With more systematic control on the part of spinners as well as of dealers, the outlook for 1928 appears brighter for a more profitable business, even though as the year opens competition is intense and margins have been reduced.

Fair Year for Combed Yarns

Spinners and Mercerizers Plan Consumer Advertising Campaign in 1928

COMBED yarn spinners have experienced a year which could not be termed better than fair and in volume was equal to that booked during 1926. The first eight months of 1927 was the period of greatest activity and the first three months the best quarter for combed spinners, the latter months of that year being the poorest for a long period. Prices advanced during the first eight months of 1927 with a fair demand from mercerizers, weavers and knitters. In January, 1927, two-ply combed yarns were selling on the basis of 58c to 62c for 58s-2 while in September the same count was selling at 80c to 85c, representing an advance of 22c to 23c, or a 30% rise within these months.

As is usually the case advancing prices stimulated buying by manufacturers. Sales expanded and spinners had a fair margin of profit, especially during the months of February, March and continuing to the middle of the year. The third quarter of the year witnessed a drastic change in the situation and trading became exceedingly quiet with the exception of single combed used for knitting purposes which enjoyed a fair demand from underwear manufacturers late in 1927, wanted for delivery during the first quarter of 1928. The upturn in combed yarn prices during the first half of 1927 was caused primarily by the flood in the Mississippi valley which started an advance in long staple cotton, while the easier trend in long staple contributed to a decline in combed yarns during the last quarter of the year.

Falling Prices Curtail Trading

The decline during the latter months of 1927 was rapid and violent, causing drastic changes among spinners and manufacturers using combed yarns; a number of mercerizers, for example, having placed large yarn contracts to be delivered during the second half of the year on the basis of 75c to 80c for 60s-2, which declined before these contracts were delivered to a 70c basis for 60s-2. The decline in combed peeler during the latter months of 1927 also affected prices of mercerized qualities to a marked degree and they declined in sympathy with yarns in the gray, many hosiery manufacturers finding themselves taking in mercerized yarns on contracts which had been placed in July at prices considerably higher than mercerized could have been bought during the months of October, November and December. Such a situation had a material effect upon demand for combed yarns during the latter months of the year, interest from mercerizers and weavers declining as the fall in prices continued, strict hand-to-mouth buying again becoming the rule.

Fluctuations in mercerized yarns were not as violent during 1927 as in previous years and the greater degree of stability attained in these qualities is pointed out as one of the desirable effects secured by the formation more than a year ago of the Mercerizers Association of America. This organization was formed with the intent of stabilizing the market in mercerized yarns. The consensus of opinion of the trade is that this influence prevented a more unfavorable situation in mercerized yarns during the year, especially during the last quarter than would have been experienced had this influence not been working.

Outlook Promising

From the combed spinners' standpoint it is felt the present year will witness improved trading conditions, due to some extent to the influence of this national organization. During the latter months of 1927 plans, for example, were formulated for a national advertising campaign to increase consumption of mercerized yarns throughout the country which in turn would increase consumption of combed yarns and improve the condition of combed spinners catering to the mercerizing trade, mercerizers taking the largest volume of combed yarns spun in this country. Representatives of the Mercerizers Association of America have formulated plans for a national advertising campaign for mercerized yarns designed to promote the larger consumption of these yarns by hosiery and underwear manufacturers by causing a larger consuming demand for mercerized products by the general public. The plan of the campaign is to emphasize in a series of advertisements advantages mercerized hosiery, underwear and fabrics possess.

A large number of combed spinners

JOHNSTON MILLS COMPANY

"Direct to Consumer"

Knitting and Weaving—Mercerized and Natural

COTTON YARNS

This organization is especially equipped to meet your requirements in a broad range of the better grade of Cotton Yarns in

MERCERIZED
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Ply Mercerized yarns of SPINNERS PROCESSING COMPANY. Noted for evenness, lustre, workmanship, knitting and finishing excellence. Full range of numbers delivered in any form of put-up.—natural—gassed—bleached — dyed.

Single Mercerized yarns of THE ELMORE COMPANY, generally recognized as peculiarly adapted to all plaiting and splicing purposes. Available in all counts to 100/1 and 120/2—bleached—tinted—dyed.

Carded and Combed yarns from the JOHNSTON chain of thoroughly modern and capably managed mills are sold under the name and added guarantee of each mill that these yarns must be satisfactory.

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signified their willingness to join this campaign and a committee met in December completing details which promise that this work would be well under way early in the present year. One of the largest fields for sale of mercerized yarns has been the hosiery trade, in which important changes in style have occurred during recent years, working to the disadvantage of mercerized yarns. Increasing popularity of all-silk hosiery, for example, has materially contracted demand from this trade for mercerized yarn and one of the reasons for the co-operative campaign of combed spinners and mercerizers is to counteract this trend.

Mercerizers' Campaign

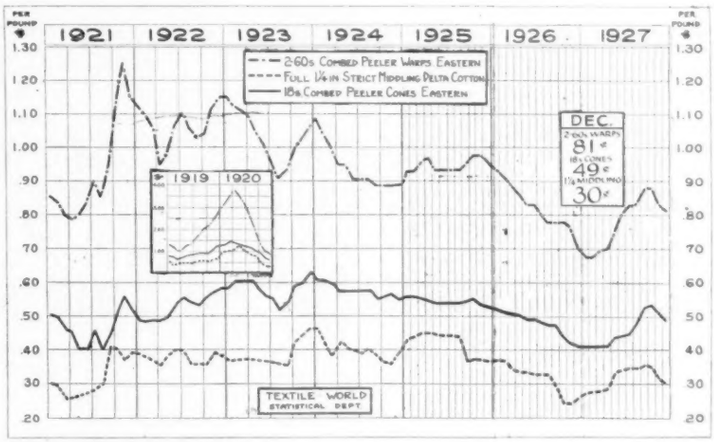
In another field, that of infants' and children's hosiery, ground has also been lost, this group of manufacturers recently having taken smaller volumes of mercerized yarns than in past years. It is now planned to call attention of manufacturers and consumers to the advantages hosiery manufactured from mercerized yarns has to offer and it is hoped to regain a large portion of this business which has been secured by manufacturers of other fibers. More than 60 spinners of combed yarns catering to the mercerizing trade expressed an interest in such a campaign and leading factors believe important results will be obtainable, favorable for combed spinners and mercerizers. While it is realized that immediate results may not be possible leaders of the movement are confident 1928 will witness a turning point in demand for mercerized yarns, as well as combed peelers, and will during the next few years expand to include much of the ground recently lost to competing fibers.

From a price standpoint the end of 1927 found combed yarns on a basis comparing favorably with that of the entire year and this in conjunction with the fact stocks of combed yarns were not excessive give combed yarn spinners grounds for viewing the present year with a spirit of optimism. A review of the price trend during 1927 will indicate that combed yarns, when considered from the margin above cost of long staple cotton allowed the spinner, were selling on a more attractive basis from the buyer's standpoint, at the beginning of the present year.

Lowest Prices in January

In January 1927 two-ply combed yarns were selling on the basis of 37 to 39c for 20s-2, 46 to 48c for 40s-2, 58 to 62c for 60s-2, 80 to 83c for 80s-2, while 18s single was quoted at 36c. These prices were the lowest of the entire year. Demand was small during the first month of the year and during the first half of February, although interest in carded qualities was the best of the year at that time.

Increased activity and the first advance in prices of the year occurred in the second week of February. At this time the market showed definite indications of broadening and for the first time larger sales were reported to mercerizers and weavers, one of the largest combed yarn spinning groups reporting the sale of more than 1,000,000 lbs., which was sufficient to keep their various mills engaged full time for a period of six weeks. By the middle of March the tone of the combed market was brighter and demand from manufacturers had materially improved. This was forecast when an examination of carded and combed prices was made, many counts of two-ply combed selling at the same price that carded yarn of the same count could be bought, 40s-2, for example, being quoted at same prices for both carded and combed at that time.



Early in March combed qualities were two to three cents higher than at the beginning of the year and mercerizers bought larger amounts than for many months, one group of Gaston County spinners selling at this time contracts for 1,500,000 lbs. a week or 500,000 lbs. more than they produced each week. Stocks of combed yarn became smaller and single combed soon joined the general upward trend, 18s being advanced to 38c, a cent higher than the previous level. The effects of this advance were felt by consumers of mercerized qualities and prices were raised two cents in two-ply and two to five cents in single mercerized, 60s-2 being quoted at 80c and 60s single at $1.03.

Mississippi Valley Flood

In March and April demand continued to expand and the influence of the Mississippi valley flood upon the long staple situation had a material influence upon the combed section of the market, buyers of combed and mercerized yarns believing that flooding of long staple sections would cause prices to rise rapidly. That this viewpoint was the correct one later results proved, combed and mercerized yarns continuing to advance from this time until the early Fall when the peak for 1927 was reached, 60s-2 at that time selling up to 80c. The largest volume of combed and mercerized business during the year was closed during the first half of the year, one of the largest consumers, for example, buying 60s-2 at 75 to 78c basis for delivery during the latter half of the year.

Late in September and early in November the market started in an opposite direction and instead of continuing the advance noted during the previous months, prices of long staple and combed yarns, fell, 60s-2 declining to 77 to 79c early in November and still further to 73c to 75c in December. The year closed with mercerizers stating that if they had been in position to purchase large quantities of combed at that time they could have bought yarns, mercerizing twist, on the basis of 67c for 60s-2. During the last two weeks of the year the market improved slightly and there were many in the trade who forecast that the long decline of the latter months of 1927 had come to an end, pointing to the fact the year 1928 opened with combed yarn stocks conservative and many consumers of combed and mercerized with contracts which expired early in the new year.

There was a general disposition on the part of combed and mercerized yarn consumers to follow a rigid hand-to-mouth buying policy during the latter months of 1927 and there was comparatively little forward business on spinners' books as the year closed. Mercerizers also reported that buying during the last quarter of 1927 was of a strict hand-to-mouth variety and they had little yarn on contract at the end of the year, a majority of their contracts being near completion in December. For this reason the outlook for the first quarter of 1928 was considered favorable as this situation indicated to them that a firmer price trend would quickly result in a fair number of buyers coming in the market and the absence of large stocks in spinners' hands would mean that they would quickly benefit from any expansion in demand.

In December combed spinners asserted that spinning margins had become narrower than at any previous time during the year, and yarns had at that time reached a price basis that left nothing for combed spinners based upon the prevailing prices of long staple cotton. It was deemed probable that any change in demand would soon result in spinners raising their margins to a more normal basis. The improvement in demand for carded yarns during December caused combed spinners to predict that their yarns would follow the general trend, early in the new year.

Cotton Waste Improves in 1927

Advancing Cotton and Shortage of Low Grades Create Heavy Strip Demand

THE cotton waste situation in 1927 was completely the reverse of that encountered in 1926. In place of high contract prices, an abundance of low grade cottons, a below normal consumption, a diminishing export and a steady decline in cotton values throughout the world there was a positive scarcity of low grade cottons, a rising cotton market for the greater part of the year, an increase in exports, lower contract prices for the season and a consumption of waste that left the market bare of surplus at several periods during the year. The year 1926 was one of the most distressing ever experienced by the waste trade but 1927 was an exceptionally good year and probabilities favor a continuance of these conditions during the early months of 1928. The general line of circumstances surrounding the cotton waste market can hardly be construed as otherwise than favorable to fairly good business. The high-priced contracts made may turn out to be satisfactory as anticipated. Just at the moment, however, dealers who are buyers are not perhaps so well situated as holders of materials. There is still a bearish tone in the market here and there, which by the way is usually in evidence prior to the completion of the contracting period.

The situation looked at broadly is promising. The view taken by some of the large operators is that there will be a better relative demand for wastes than for cotton during the next few months. Mill curtailments will probably spread further and lead to larger restriction in the output of wastes but as against this mills accustomed to using cheap cotton will, in view of the generally high-grade character of the 1927 crop, be more urgent in their endeavor to obtain spinnable wastes to cheapen the first cost of their manufactures. The strong and sometimes acute situation in strips is likely to run well into 1928.

Bullish Opinion Outlined

The cotton situation at the opening of 1928 seemed to favor a continuance of hand-to-mouth buying both of the raw material, its by-products and wastes. The output of comber has been and continues to be greatly restricted by conditions within the industry brought about by the change in character of demand in the goods market, influenced prior to this by the tire fabric manufacturers using carded instead of combed yarns in

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Fine Gassed, Mercerized, and Bleaching Knitting Thread and Embroidery Yarns

Commission Mercerizers
200,000 lbs. Weekly

Selling Agents

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the production of their cloth. Operators in waste who take a bullish view of the situation for the early months of 1928 give in general the following reasons for their attitude:

1.—The larger part of the contracting for mill wastes has now been accomplished and the normal desire of waste dealers to keep prices as low as possible during the contracting period will shortly be replaced by a firmer market and an advance in asking prices from consumers.

2.—The shortage of low grade cotton in 1927 crop brought about an abnormally good demand for all qualities of strips to cheapen the cost of production.

3.—Even if curtailment in cotton manufacturing goes further it will also reduce the output of strips.

4.—Stocks of good wastes in recent months have been barely adequate to meet consuming demand and at no time recently has there been any surplus.

5.—The demand for spinnable wastes is likely to continue quite good until at least the 1928 crop is well along and some prediction regarding character of the crop can be made.

6.—Although contracts have been made on a higher basis than a year ago there is likely to be a sufficiently sustained demand to maintain good prices.

7.—The output of comber is so much below what it was a few years ago when tire manufacturers used combed yarns that at no time is the output likely to exceed foreign and domestic consuming demand.

Bearish Sentiment Summarized

Opinion in the trade at the beginning of 1928 was not without a pessimistic turn in certain quarters. Some operators took a rather bearish view of the situation, looking for a recession in values rather than a firm and advancing market and gave in general the following reasons:

1.—The waste industry is a "waste" and not a staple proposition and must be so regarded. When prices become too high demand is seriously restricted.

2.—Such high prices have been paid this season for spinnable materials and threads that it is impossible to sell these materials on current market except at a loss.

3.—Curtailment in cotton manufacturing following a year in which large stocks of finished goods have accumulated will certainly lead to restricted waste consumption.

4.—The English market cannot afford to buy comber and breaking-up threads at current American values based on contract prices made this season.

5.—The American market for strips is so high that England is able to export these materials, imports now arriving and likely to show further expansion.

6.—The Indian cotton crop which is 8-10% larger than the previous season has a considerable exportable surplus and cheap cottons are beginning to arrive. Low India cottons 5/8 inch can compete effectively with American strips and even the 7/8 inch cotton can be bought in 1c per pound below similar American grade.

7.—There is every reason to suppose that an immense acreage will be planted in 1928 and a bumper crop this season seems inevitable.

In spite of the fact that there was an immense consumption of cotton during the year 1927 there was a very general complaint in the waste trade at several periods of the year regarding a shortage of waste for trading purposes. No one seemed to be able to offer any satisfactory explanation. On general principles and in view of the heavy consumption of strips and other spinnable materials there was no doubt some truth underlying the complaint but the low grade materials utilized by mattress, upholstery and batt manufacturers were in fair accumulation, the absence of the Ford interest for several months being a factor. In general the amount of waste coming out of the mills is related strictly to the amount of cotton going through the cards and spindles. In the case of comber the situation is different because the combing operation is an additional one only necessary when combed yarns are to be produced. As the output of combed yarns is below normal as related to the general consumption of cotton the output of this high priced and valuable by-product continues relatively small in spite of large spindle activity in the industry North and South.

Large Export Increase

Exports of cotton waste in 1927 for the period January-October showed a gain over previous season of 28,893,000 pounds. Imports on the other hand showed a decline of 5,658,000 pounds. The situation for the ten months is shown herewith:

	1926	1927	Change
Exports	54,127,000	83,020,000	28,893,000*
Imports	23,812,000	18,154,000	5,658,000†

* Increase † Decrease

English consumers who contracted early in 1927 for good spinnable wastes made a substantial killing. Their contracts for good threads at the beginning of the year at approximately 10½c and for comber at 12c, these materials rising later in the year to 14-15c for threads, and 19-20c for comber were remarkably favorable. If domestic consumers of comber, strips and similar materials had shown more confidence they would have been able to supply a good part of their needs for the year at prices which near the end of the year seemed ridiculously low. Later in the year English buying fell off very considerably. The Manchester market operated with increasing caution; sentiment became more bearish and large operations were held in check until confidence in the stability of values found confirmation.

Cotton waste prices in October were on a generally high level but not out of relation to the average price of cotton for the month. It was evident from the news filtering in regarding southern contracts that the feeling was very general that a strong level, both for cotton and its waste materials, was likely to be maintained well into 1928. October waste business on the whole was fairly satisfactory. A rather substantial volume of most classifications moved out to consumers. Peeler comber maintained itself throughout the month as the highest priced waste with the possible exception of spinners and rovings which are always negligible in quantity and choice sak. strips, which were in small supply. In a broad way cotton and its spinnable wastes move together. The general opinion is in favor of higher cotton, with the further proviso that if the boll weevil happens to be assisted next season by favorable weather for breeding purposes next year's crop may be short in spite of larger acreage. Cotton, meantime, receded from its high point of the year approximately 20% and wastes followed in general the downward movement though to a lesser degree. As cotton drops wastes sag, but cotton would have to decline considerably more before any price weakness is likely to be registered in threads, good strips and comber. Single spooler is very firm and in good demand with a little export business being done in the Manchester market around 13½c delivered.

Outlook Considered Fair

The movements in the price of cotton at around 19c near the end of the year were having very little influence on prices asked and paid for spinnable materials. The cotton industry in 1927 consumed an immense amount of cotton and huge quantities of waste and yet came to the end of the year registering a large turn-over at minimum profits. The New England situation was not cleared to any very considerable extent and a dozen of the large mills in the section had to resort to the old-time policy of cutting wages. The outlook for the waste seller was in spite of this general situation in manufacturing favorable on the whole. There seemed little reason to doubt that sales on relatively high prices would be made on all kinds of good strips for many weeks to come. So far as threads were concerned the restriction of mill schedules brought about a decline in output but there are so many non-textile openings for threads below the breaking-up quality that holders of these materials have very little to be disturbed about.

Waste dealers had no particular selling problem in 1927. Contracts were made on a low basis and there was a rising cotton market the greater part of the year and altogether the situation was one in which the usual careful merchandising led to fair profits. The vital question now before the market is Will current levels be maintained? A staple market over a period of months would be of great advantage.

Encouraging Outlook in Staple

Season a Difficult One, but Broader Demand Anticipated

MEMPHIS, TENN.

NO phase of a very difficult season, since Aug. 1, for the cotton shipper has presented more complications than those relating to staples. Complete change as to the quality of the supply in first hands and surplus from previous crops held elsewhere seems to have been at the bottom of most of the difficulty.

The calendar year was started with a super-abundance of low grades from a very large but extremely late crop, the harvesting of which was delayed by continued rainfall. The supply of high grade staples was small in comparison with the total supply of all grades of staples but, supplemented by the carry-over and the ability of many consumers to substitute low grades for the better ones and because of the attractive prices at which low grades were selling, demand early in 1927 lagged and middling and better 1⅛" staples commanded less than normal premiums. Premiums on 1 3/16" and 1¼" held at about the normal differences or above, owing to comparatively small production of such lengths.

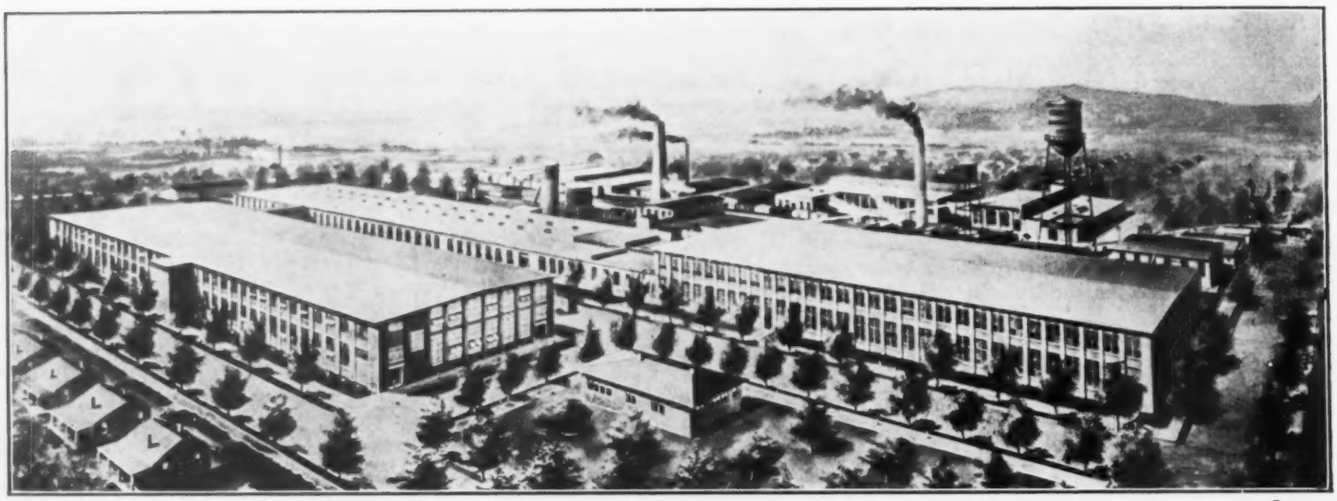
Although the crop of 1926-27 was a profitable one for the merchant and the investment buyer, the grower was hard hit. The average price received by the grower for low grade staples was probably under 10c a lb.—and the bulk of his crop was of low grade. Many who produced a bale or more to the acre went bankrupt or were on the verge of it.

During the first week of January, 1927, the premium on strict middling 1⅛" staples was quoted at 300 points on, 1 3/16" at 600 on, and 1¼" at 1,000 on. Premiums narrowed 50 to 100 points during the first two months of the year but during the next two months recovered owing to the influence of the flood threat.

Highest premiums of the season were reached early in May and maintained until the new crop started to move. During this period strict middling 1⅛" staples were quoted at 450 on, 1 3/16" at 800 on, and 1¼" at 1,200 on. The influence promoting this advance was the flood which, breaking through levees, inundated millions of acres of cotton lands and destroyed or impaired the quality of considerable staple cotton in warehouses.

Effects of Flood

After-effects of the flood are reflected in the smaller production of staple areas. Smaller production was due to loss of acreage and late planting—some as late as July 10; unfavorable weather in parts not affected by floods and boll weevils were contributing causes. At the same time



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production in the Yazoo Basin in Mississippi, whole counties of which were inundated, was not far from a 10-year average, although far below either of the two previous years. Final ginnings will total about 525,000 bales against about 900,000 bales the previous year and a similar quantity the year before. Close to 90% of the crop of the Yazoo Basin is of staple length—mostly Delfos, a seed variety, producing 1⅛ to shy 1 3/16".

While the crop of the Yazoo Basin turned out better than average expectation, the crop of eastern Arkansas and southeastern Missouri was a disappointment. Eastern Arkansas and portions of southeastern Missouri go in very heavily for Delfos and while no survey has ever been made, many reliable merchants are of the opinion that the alluvial section immediately west of the river has in recent years produced as many staples as Mississippi. Arkansas and Missouri cotton crops suffered by reason of the floods, late planting, continued rains which developed laterals at the expense of tap-root and some weevil damage; late bolls, that had been considered safe, failed to open.

High Grades Neglected

High grade staples have been neglected all season, with premiums narrowing in consequence since the middle of August, and are now at the low point since that time. Strict middling 1⅛" is quoted at 350 on, which is regarded as about a normal premium; 1 3/16" strict middling is quoted at 450 on, slightly under normal, and 1¼" at 650 on, fully 250 points under normal, but there is a limited supply of 1 3/16" and very little 1¼" and quotations are more or less nominal. Shippers say 1 3/16" and 1¼" cannot be bought at the prices quoted; also it is pretty generally agreed that present demand is negligible.

Staple values have been held up, in the face of poor demand, through the confidence of owners and largely through the instrumentality of the staple association. There has been no pressure to sell.

That high grade staples have not shared in the active demand for other cottons is due to negligible interest on the part of mills since the cotton has been ready for the market and because there was no extensive short interest in them such as existed in high grade short cottons and in all the low grades.

Consumer interests have bought very sparingly of any kind of cotton since the summer months but forward business on short cottons, booked by shippers to their sorrow prior to Sept. 1, was very large. Competitive buying to meet these commitments advanced the basis inordinately and from 100 to 200 points above mill ideas of prices where new business was sought. Scarcity of low grades narrowed prices differences out of all proportion to intrinsic differences. The short interest, except on low grades, has now been covered at least to the point where the shipper can proceed leisurely but the shipper has suffered severely in the operation. More low grades were sold than were produced. Consensus of opinion is that the crop will show a grade average of several points above middling.

Stocks on Hand

The staple association reports an unsold stock of 90,000 bales out of total receipts so far this season of 125,000 bales. Most of the cotton sold was under the grade of middling. The unsold stock in hands of Memphis factors approximates 100,000 bales, a very large part of which is high grade staples. Shippers have accumulated moderate stocks against sales to be made in the future; stocks owned by shippers include some low as well as high grade staples. Staple stocks in Mississippi delta compresses are estimated at 300,000 bales, and there probably are 150,000 in Arkansas compresses.

Liverpool Shows Interest

Liverpool, out of the market for months, is beginning to show more interest and is asking for middling and better, as well as the low grade staples. Inquiry suggests that low and strict low middling would be preferred but middling and better will be considered if the lower grades are not to be had. A few lots have been sold but so far transactions are not large in the aggregate; sales in several instances have involved the shading of basis. Owners are showing more disposition to sell but are exerting no pressure. Most of the unsold cotton is in strong hands from which it cannot be shaken by anything short of loss of confidence. Very little unsold cotton has been hedged so that the owner is not in the favorable position to make concessions he would have enjoyed after a decline in contract values, had hedging been more generally practiced. Instead of hedging, there was more cotton sold on seller's call than ever before; principal sufferers as a result thereof are the country merchants and ginners, although large plantation owners and small farmers have not escaped without some hurt.

Outlook for Future

Mid-season finds the market as a whole more inclined to look for the bright side of things than to cry over spilled milk or to give way to pessimism as to the future. Optimism is based on the idea that poor goods demand since early in September was due to no lack of potential demand but to the fact that nobody buys in quantity or very far forward on a declining market. It is assumed that goods wants have been allowed to accumulate and that this will be reflected in demand at no distant date; and that mills have consumed their carry-over and purchases since Aug. 1 to a point where they will have to enter the market freely for raw material.

Cotton merchants in this territory are probably moderately long in the net, although short on the low grades.

New crop prospects are, of course, a live question. Acreage ideas are not well defined but opinion is pretty nearly unanimous that there will be a material increase. Acreage not planted last year, because of floods, would of itself make a considerable addition to the staple acreage. Some of these flood lands were rendered useless for years, if not permanently, by heavy deposits of sands but most of the flooded area was greatly enriched. The more important crevasses have been filled but the fresh dirt has not been sodded and would not withstand wave wash as an established section of levee would do. The Mississippi River has been full all winter and very little revetment work has been done.

The labor supply promises to be ample. A short time ago some large planters were investigating with the idea of importing Mexican labor but abandoned the project because it was found to be unnecessary. The small farmer is in better position than has been his for several years and is enthused by the unaccustomed prosperity. Needless to say portions of the flood areas do not share in the prosperity—they miss a crop, or relatively so.

A severe freeze recently, the heaviest in 10 years, lasting several days, will greatly benefit the soil. The ultimate effect of the freeze on boll weevils will probably be negligible. Unquestionably emergence from hibernation will be reduced but, under favorable conditions, the cotton weevil multiplies so rapidly that emergence is unimportant compared with the rate of increase after emergence. Wet weather during June, July and August would be favorable for weevil propagation, while hot dry weather would not only limit reproduction but destroy large numbers of adult weevils. At this distance from the new crop, the boll weevil appears to be the principal menace in the way of a satisfactory yield. The carry-over of weevils was large.

There has been very little new crop preparation. However most of the fields, in striking contrast with last year, are now bare of cotton so that in the event of favorable weather, the farmer is in position for an early start. Last year he was handicapped by an uncompleted harvest.

The seed supply is ample and having been harvested under ideal conditions should show a high percentage of germination.

Opening and Cleaning Machinery

(*Continued from page* 156)

the two tests was 50%; that, while the two-blade beater of the breaker lapper removed 2.75 lbs. of waste the first time through and 3.40 lbs. in Test No. 2, or almost 25% more, yet the efficiency was approximately the same in each case—18.50% and 18.78%; that, while the finisher picker in Test No. 2 removed 5 lbs. of waste as compared to only 3.75 lbs. in Test No. 1, the efficiency of this unit was greater in the latter than in the former instance, in the ratio of 43.32 to 34.0, etc.

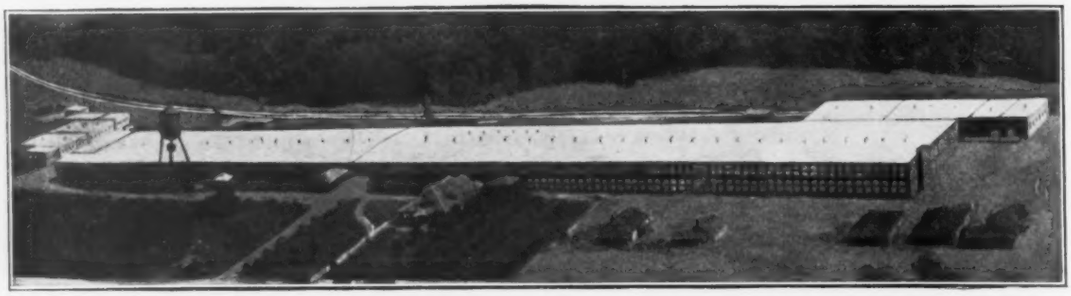
Obviously, judged from these tests, the usual criterion of the efficiency of such machines based on the proportion of waste removed compared to total amount of cotton fed in at the bale breaker is erroneous and misleading, for the intrinsic value of each unit, as a cleaning machine, depends on the proportion of waste removed compared to the total waste in the raw cotton rather than compared to the weight of cotton itself.

Vertical Opener Efficient

Judged on this conclusion, the vertical opener is a much more efficient machine than either the three-blade beater which preceded it or the horizontal cleaning machine that followed; and, furthermore, its efficiency was practically constant, even after considerable waste had been taken out as in Test No. 1 the second time through. The efficiency of the horizontal cleaning unit, on the other hand, fell off from 12.03% to only 5.79% after the cotton had been once cleaned. Apparently, then, this latter type of machine is better suited for cleaning comparatively dirty, rather than comparatively clean cotton.

Again, it will be noted that the cleaning efficiency of the 40-in. Buckley beater when in this position is relatively low, since it removed only a little over 8% waste as compared with the two-blade beater in the same machine which took out from 18.50 to 20.25% waste. Other tests, however, have shown that the Buckley beater has an efficiency of 13½ to 16½% when placed after the bale breaker or preceding the vertical opener. It should be borne in mind that the figures given in this investigation are based upon the relative locations the machines occupy in this mill and do not purport to show the absolute efficiency of any particular unit. It should also be remembered that there is a great difference in the design of the Buckley opener as made by various machinery companies, which would naturally affect the efficiency.

A comparison of Tests Nos. 1 and 2 shows that in the former the finisher laps weighed 457 lbs., and in the latter 456.75 lbs., although the total waste through the picker room was in the former case 31.89 lbs., and in the latter only 23.50 lbs. This gives an invisible waste of 11.11 lbs. and 19.75 lbs., respectively, out of 500 lbs. raw cotton—a portion of which was fly, dust lost in the dust room, and moisture. Probably the greater part of the loss was moisture, as the cotton used in Test No. 2 lay in the opening room, which was heated about 48 hours, while that in Test No. 1 was passed through the machine as soon as taken from the bales and weighed. It would seem that the drier condition of the cotton in Test No. 2 would tend to make it easier to clean, but it seems not to have had this effect.



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Fairly Stable Cotton Market, with Normal Distribution Volume, Expected in 1928

Last Year Was One of Adjustment and Assimilation — No One Feature of Dominant Importance

THE year 1927 has presented so many features of possible significance to the future of the cotton trade, that it would be difficult to settle upon one as of dominating importance. Perhaps one might so consider the recrudescence of the boll weevil menace, as indicating that this pest must still be reckoned with as a factor in the future costs of production. Another might point to the export movement as indicating that recuperation in Europe has carried buying power abroad, so fas as cotton goods are concerned, up to the pre-war levels, with a probability that the normal increase will now begin to make itself felt in the figures. Still others might think they had detected in the records of the last year additional evidences of the price, which at the present buying power of the dollar has a tendency to stimulate consumption, and the price which has a tendency to restrict production. And still others might be inclined to argue that the course of the market during the last year had, to some extent, indicated that various Government activities in the matter of crop forecasts and the dissemination of statistical information generally, have a tendency to exercise rather a stabilizing effect on values.

Conditions at Start

The beginning of the year, it may be recalled, found the market in the processes of distributing a record-breaking crop of cotton and still more or less nervous over the prospective surplus. The weight of the supply had already been discounted by the declines of the late autumn or early winter, however, and a recovery had set in which continued almost without interruption until some of the present crop deliveries were selling around the 25c. level at the beginning of last September, or at approximately double the price touched on the decline of the previous autumn. This advance, of course, was inspired by the development of a very extraordinary demand following several years of comparative scarcity and economies in the use of cotton abroad and stimulated by a price generally conceded to be under the average cost of production, during previous seasons since the war. It was further stimulated, as the growing season of 1927 advanced, by unmistakable indications that the crop of 1927 was to fall far below that of 1926, the first of these indications being found in the reduction of acreage while later the prospect for a reduced yield per acre was made apparent by reports of boll weevil damage following the much reduced applications of fertilizer during the spring.

Owing to the change in the laws regulating the issuance of crop reports, there was no Government statement on the coming crop prospect except for figures on acreage, until early in August. This first official forecast placed the indicated crop at 13,492,000 bales and the indicated yield per acre at 156.8 lbs. The indication was dropped to 12,692,000 bales with an indicated yield per acre of 149.3 lbs., as of Sept. 1, but it has been one of the rather remarkable features of the season that later reports showed variations of less than 200,000 bales in the crop indication and that the final estimate in December, 12,789,000 bales was within 700,000 bales of the initial estimate on the first of August.

This, of course, would seem a tribute to the work of the Crop Reporting Board and the efficiency of the methods which it has developed during the last few years. It is safe to say, there has never been a more elaborate, more scientific or a more thoroughly "checked by experience" system of compiling crop reports than that now employed by the Crop Reporting Board in Washington. The evenness of these estimates, demonstrating the care with which the peculiarities of the season and probable causes of damage were studied, has in itself had a more or less stabilizing effect on the market. It may be, of course, that final ginning returns will cause revisions in the estimate of the total yield, but they are not likely to be important and the trade with rather remarkable unanimity has accepted the December estimate of the Department as a trustworthy basis for calculations of the statistical position.

Export Movement

The export movement during the first seven months of 1927 established a new high record. Exports for the season ending July 31, 1927, exceeded previous record year of 1911-12 by over 400,000 bales. The total, including linters, for the 12 months then ended amounted to 11,183,998 bales, compared with 10,681,758 bales for the season ended Aug. 31, 1912. The consumption of cotton in this country also exceeded all previous records, aggregating 8,004,921 bales, according to the preliminary figures of the Census Bureau, linters included.

Because of this extraordinary volume of takings in the form of home consumption and exports, the surplus supply derived from the crop of 1926 was very widely distributed at the end of the season, the carryover in this country showing an increase of only about 220,000 bales although the world's carryover, according to the figures of Secretary Hester, showed an increase of about 1,600,000 bales.

The situation in this respect may be illustrated by Table I showing the amount of cotton consumed in this country, including linters, the amount exported, and the amount of cotton remaining on hand in United States at the end of each season, for periods of four years preceding the war, the first four years after the war, which we have termed the period of "reconstruction," and the last four years, which we have grouped as the period of "recuperation:"

TABLE I

	Home consumption	Exports	Carry over
Prewar:			
1910-11	4,704,978	7,781,414	1,375,031
1911-12	5,367,583	10 681,758	1,776,885
1912-13	5,786,330	8,800,966	1,648,438
1913-14	5,884,733	8,914,839	1,647,836
Average	5,435,906	9,044,744	1,612,047
Reconstruction:			
1919-20	6,762,207	6,598,347	4,572,812
1920-21	5,408,979	5,796,107	7,230,639
1921-22	6,548,853	6,316,121	3,084,663
1922-23	7,312,201	4,864,027	2,285,660
Average	6,508,060	5,893,650	4,293,443
Recuperation:			
1923-24	6,217,292	5,772,000	1,770,172
1924-25	6,852,265	8,195,876	1,807,462
1925-26	7,259,618	8,155,570	3,824,089
1926-27	8,004,921	11,183,938	*3,762,029
Average	7,083,524	8,326,846	2,790,938

* Preliminary estimate Dept. of Commerce. Does not includer linters.

The bullish impulses derived from this combination of unprecedented old crop takings, the expansion in mill activities and in the demand for cotton goods, and the prospect for a substantially reduced coming crop, carried over into the new season. Traders for a time seemed to lose sight of the fact that the surplus from the 1926 crop, although so widely distributed, was available to aid in offsetting the smaller new crop prospects, and also that the increased output of cotton goods during 1926–27 had probably left the world better supplied than at any time previously since the war. The advance which started early in 1927 continued, culminating at approximately the 25c. level for May contracts on Sept. 8, making an advance of over 12c. a lb. as compared with the low price of January.

The decline which followed, appeared to be precipitated by the much-discussed statement of the Bureau of Agricultural Economics in its report on the price situation published on Sept. 15, which, it may be recalled, emphasized the probability of a decline. The market having been bought for months, as we have previously said, at almost steadily advancing prices, was suddenly awakened to bearish possibilities as since reflected in the very sharp falling-off in exports, and the prolonged lull in the demand for cotton goods in the domestic markets, following the extraordinarily active demand of the spring and summer.

A period of liquidation set in, which by the middle of December, had carried the market off to 18.30 for May deliveries or nearly 7c. from the high level of the season. As prices approached 18c. the improved technical position of the market asserted itself, while some buying was developed by the continued heavy domestic consumption and there were rallies which established a trading level around the 19 to 20c. mark toward the end of the old year.

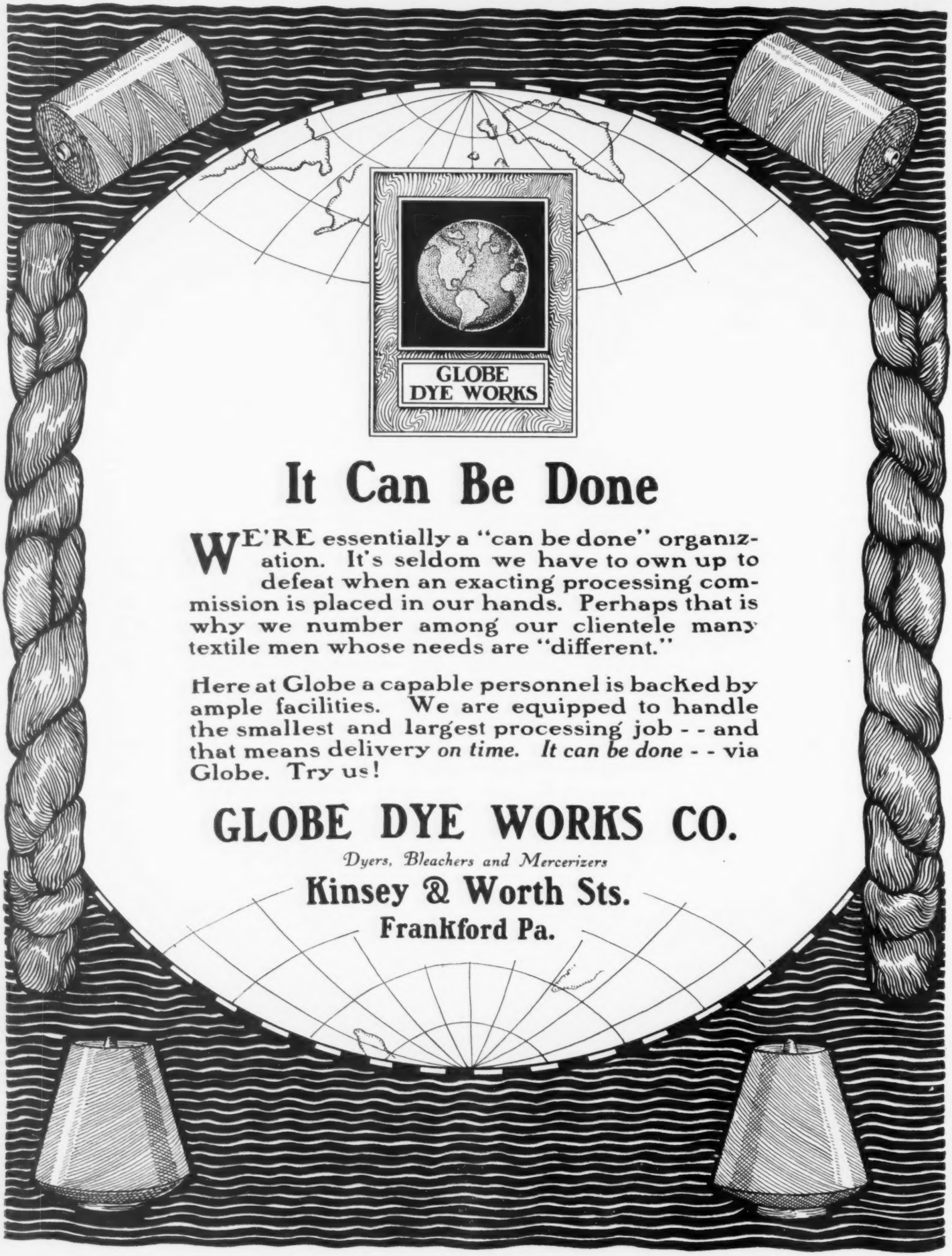
Different Outlook Now

There is quite a contrast between the outlook before the trade at the beginning of 1928 as compared with 1927. At the beginning of 1927, it may be recalled, the market was looking forward to an expanding volume of consumption owing to the ample supply and comparatively low price and to a probable sharp reduction in acreage. At the beginning of 1928 there is less certainty as to the prospect. The trade expects a fair normal volume of consumption if prices remain between the 18 and 20c levels but also expects an increase in acreage, and feels that the trend of values will be determined by the gradual development of coming crop prospects rather than by any condition existing at present, or which can be foreseen with a reasonable degree of certainty.

Statistically the situation at the end of this season, that is on July 31, 1928, will undoubtedly be stronger. There has been a check on consumption, whether entirely due to the higher level of prices or partly to satiation following the enormous absorption of last season, and in a general way, estimates of the world's consumption for the season range from about 14¾ to 15 million bales compared with the crop of approximately 12,800,000 bales, linters excluded. This, of course, points to a reduction of about 2,000,000 bales in the world's carryover of American lint cotton, which would mean quite an ample supply with which to start the coming season, but one which would leave the market very sensitive to any unfavorable development in coming crop prospect.

Statistical Position

Up to the time of this writing the final figures of the Census Bureau on the supply and distribution of cotton in the United States for the season had not yet become available. The



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statistical situation, so far as cotton in this country is concerned, however, is roughly outlined on the basis of preliminary figures of the Census Bureau on distribution and estimates of this season's supply in Table II.

TABLE II

	1927-28 Lint	1926-27 Lint
Supply:		
On hand August 1st	3,762,029	3,542,560
Net Imports	380,000	376,771
Production	12,789,000	*17,869,978
City crop, etc	200,000	168,096
Total	17,131,029	21,957,405
Distribution:		
Exports to January 1st	3,781,769	5,511,987
Home consumption	3,042,968	2,825,916
Total 5 months	6,824,737	8,337,903
Left for 7 months	10,306,292	13,619,502
After January 1st		
Exports	*3,843,000*	5,410,665
Home consumption	*3,867,000*	4,376,808
Destroyed season	*60,000*	70,090
Total	*7,750,000*	9,857,473
On hand July 31st	*2,556,292*	3,762,029

*Ginnings for 12 months last season. This season's production based on estimate of crop without allowance for ginnings prior to August 1st, which may be offset by early ginnings from the crop of 1928.

The figures given as representing possible exports and home consumption after Jan. 1st this year are, of course, purely imaginary and are not intended as estimates. As a matter of fact, the distribution of cotton during the last seven months of the season will depend upon the shaping up of new crop pospects and the action of prices. If the new crop promises well and new crop months go to large discounts, distribution of the present crop will be checked. If, on the other hand, the new crop shapes up poorly and late months hold up to or sell above old crop positions, every available bale of old crop cotton that can be spared from the reserve, will probably be taken if not consumed.

The figures on exports are based partly upon an assumption that the falling off shown for the first five months of the season may continue, and upon the further fact that exports of 7,750,000 bales for this season would make an average export movement for the past two seasons of 9,467,000 bales which would be just about equal to the average pre-war movement, as may be seen from Table III which gives exports for the four seasons 1911-15 inclusive, with the average yield per acre and the average price per pound, the latter being Secretary Hester's average price of middling.

TABLE III

	Exports	Yield per acre	Average price
1911-12	10,681,758	207.7	10.16
1912-13	8,800,966	190.9	12.20
1913-14	8,914,839	182.0	13.49
1914-15	8,544,563	209.2	7.94
Average	9,235,532	197.5	10.95
1919-20	6,598,347	161.5	38.21
1920-21	5,796,107	178.4	16.08
1921-22	6,316,121	124.5	17.78
1922-23	4,864,027	141.3	24.06
Average	5,893,651	151.4	24.04
1923-24	5,772,000	130.6	31.67
1924-25	8,195,876	157.4	24.27
1925-26	8,154,611	167.2	19.88
1926-27	11,183,998	182.6	12.96
Average	8,326,621	159.4	22.19
1927-28	*7,750,000	*152.3	*19.25

*Estimates of exports are heard ranging from around this figure which is used merely for purposes of illustrating the trend. Yield per acre is given as estimated by the Department of Agriculture. The price of middling is that recently ruling in the New Orleans market.

RAW COTTON STATISTICS FOR 1927

	1927	1926	1925	1924
January:				
May contracts, New York	13.80-12.83	20.00-19.28	25.13-23.39	35.65-32.60
Domestic consumption, lint	603,242	582,315	594,010	576,644
Exports, lint and linters	1,115,792	749,967	1,076,075	546,253
Ginned to January 16	16,616,893	15,499,893	13,306,813	9,944,032
February:				
May, contracts, New York	14.35-13.46	19.92-18.70	25.65-24.19	34.97-28.52
Domestic consumption, lint	589,513	565,118	550,775	507,876
Exports, lint and linters	1,010,507	556,185	811,838	482,146
March:				
May contracts, New York	14.70-13.26	19.09-18.27	26.25-24.22	29.70-26.45
Domestic consumption, lint	693,081	635,896	583,407	483,928
Exports, lint and linters	1,129,537	519,732	740,076	332,168
Final ginning report	17,755,070	16,122,516	13,639,399	10,170,694
April:				
May contracts, New York	15.17-13.97	19.00-18.51	24.93-23.68	31.95-27.95
Domestic consumption, lint	618,279	577,678	596,541	480,010
Exports, lint and linters	855,449	516,494	472,555	320,774
May:				
May contracts, New York	16.19-14.27	19.14-18.54	24.24-21.65	32.30-30.25
Domestic consumption, lint	629,948	516,376	531,668	413,649
Exports, lint and linters	628,132	419,459	330,967	326,357
June:				
July contracts, New York	17.05-16.05	18.46-17.45	24.09-72.40	30.50-27.75
Domestic, consumption, lint	659,841	518,607	494,083	350,277
Exports, lint and linters	481,943	346,533	217,786	230,979
July:				
July contracts, New York	18.30-16.74	18.82-17.50	24.62-22.70	35.40-28.50
Domestic consumption, lint	569,765	461,743	483,926	346,671
Exports, lint and linters	389,358	366,722	202,468	211,533
Acreage planted	42,683,000	48,898,000	46,448,000	40,403,000
Commercial crop, old season	19,723,963	15,655,000	14,962,000	11,322,201
Word's carry-over of Am	7,238,000	5,639,000	2,991,000	2,890,000
August:				
October contracts, New York	23.40-16.95	18.18-16.15	24.45-21.85	25.30-24.05
Domestic consumption, lint	633,434	500,652	451,236	537,455
Exports, lint and linters	340,311	391,329	315,825	277,641
Aug. 1 condition	69.5	69.8	65.6	67.4
Indicated crop	13,492,000	15,621,000	13,566,000	12,351,000
September:				
October contracts, New York	24.40-19.90	18.05-13.91	24.75-22.95	26.25-21.50
Domestic consumption, lint	627,321	571,105	483,082	435,216
Exports, lint and linters	631,041	794,584	752,324	737,010
Ginned to September 1	1,540,025	694,877	1,892,549	958,204
September 1 condition	56.1	59.6	56.2	59.3
Indicated crop	12,692,000	15,166,000	13,740,000	12,787,000
October:				
December contracts, New York	21.89-19.42	14.25-12.00	23.30-18.75	25.90-22.10
Domestic consumption, lint	612,935	568,532	544,097	532,629
Exports, lint and linters	1,126,509	1,369,820	1,421,482	946,989
October 1 condition	54.2	61.3	.....	53.5
Indicated crop	12,678,000	16,627,000	14,759,000	12,499,000
Ginned to October 18	8,118,978	8,722,066	9,518,946	7,615,981
November:				
December contracts, New York	21.02-18.78	12.73-12.10	21.73-18.96	24.95-22.55
Domestic consumption, lint	625,680	583,950	543,488	492,233
Exports, lint and linters	999,501	1,486,224	1,206,786	1,306,550
Ginned to November 14	10,899,182	12,953,708	12,249,935	11,147,524
December:				
December contracts, New York	19.62-17.96	13.16-11.85	20.58-19.60	23.76-22.52
Domestic consumption, lint	543,598	605,217	576,216	532,047
Exports, lint and linters	767,314	1,531,297	984,061	1,075,923
Ginned to December 13	12,071,799	15,542,249	14,826,452	12,796,216
Government crop estimates	12,789,000	18,618,000	15,603,000	13,153,000

The figures given in the table of prospective supply and distribution as possible home consumption for the balance of the season are based partly upon a possibility that domestic mill consumption for the last seven months will show about the same falling off as compared with last season, as noted in the case of the December figures. Evidently mill production in this country is to be regulated to the actual demand in order to prevent price depressing accumulations, and it is a question whether the fairly satisfactory but hardly boom character of general business throughout the country will sustain such a demand for cotton goods as was stimulated by the low prices of the previous season. Assuming home consumption amounting to 6,900,000 bales, exports of 7,625,000, during the last seven months of this season, and the destruction of about 50,000 bales in this country, we should have a stock on hand at the beginning of August, 1928, of 2,556,000 bales, including foreign cotton, which would be about the average of the previous four years.

New Crop Outlook

The problem before the trade quite obviously is the new crop outlook. There is sufficient cotton available in one place or another to generously satisfy the needs of the present season with a possibility, however, that the world's reserves, particularly in the event of declining prices may be so far reduced as to emphasize even a moderately bullish development of new crop possibilities.

So far as preliminary facts bearing upon the coming crop are concerned, the trade seems fairly confident of three factors of more or less importance. First, it is anticipated that there will be a substantial increase in the acreage, owing to the higher price and the more prosperous position of Southern farmers. It would appear from the records of past years that while 18c may be the line of demarkation between increased and decreased world's consumption, the dividing line with reference to acreage may not be far from 15 to 16c.

Table IV has been compiled with a view to throwing some light upon this question of price and acreage. Of course, the buying power of the dollar fluctuates, but without allowance for that, it may be noted from Table IV that the decline from the high price of 1920 to the low price of 1921, led to a very sharp reduction of acreage planted in the latter year. Again, it may be noted that as prices advanced from the low point of 1921 to above 18c., the acreage very steadily increased, from the 31,678,000 acres planted in 1921 to 48,730,000 planted in 1926, this expansion being rendered possible by the bringing into cultivation of new lands in the extreme west, but with the drop in price as a result of the big crop of 1926 the acreage planted in 1927, according to the December revision, dropped to 42,112,000 bales. With the price now around or above 18c. an increase in acreage is anticipated.

TABLE IV

Year	Mean January Price of October in New York	Acreage planted	Acreage picked
1920	30.35	37,043,000	35,877,000
1921	15.38	31,678,000	30,509,000
1922	16.21	34,016,000	33,036,000
1923	25.58	38,709,000	37,130,000
1924	28.23	42,641,000	41,360,000
1925	23.90	48,090,000	46,053,000
1926	18.27	48,730,000	47,087,000
1927	13.69	42,112,000	40,168,000
1928	18.00	.....	.....

The idea of expected acreage has not yet crystalized into definite figures. One of the local authorities who was recently in the Southwest says there may be an increase of about 8%. Opinions in the local cotton trade, however, probably run somewhat above this figure. Perhaps, at the present time, the average idea is an increase of about 10%, and an increase of 10% in acreage, with a ten-year average yield per acre would mean a crop in the neighborhood of 15,000,000 bales, which is not far from prevailing estimates of this year's actual world's consumption of American lint cotton. Sales of fertilizer tax tags up to the end of December were regarded as pointing quite conclusively to the probability of an increased use probably in excess of the increase in acreage; in other words, not only as foreshadowing a larger acreage but more intensive cultivation. On the other hand, as a drawback to these optimistic views of the coming crop outlook, there is the question of boll weevil which bulks large after the damage reports of 1927. Table V shows the latest available data on causes of damage to the crop in percentages.

TABLE V

Growth year	Climatic	Diseases	Insects	Unknown	Yield lint per acre
Pre-war period:					
1910	22.6	0.4	7.5	5.1	170.7
1911	15.4	0.4	7.9	2.4	207.7
1912	20.7	4.3	6.5	1.2	190.9
1913	23.1	0.5	8.9	1.2	182.0
1914	13.8	0.2	9.8	1.6	209.2
Average	19.5	1.1	8.1	2.3	192.1
Post-war period:					
1919	21.2	1.4	18.8	0.5	161.5
1920	13.1	1.1	24.0	0.8	178.4
1921	16.1	1.0	35.4	0.5	124.5
1922	17.5	0.8	26.7	0.2	141.3
1923	18.0	0.7	26.6	0.2	130.6
Average	17.2	1.0	26.3	0.4	147.3
Last three years:					
1924	21.3	0.8	12.0	0.6	157.4
1925	29.7	0.6	6.1	0.1	167.2
1926	11.5	2.0	15.8	0.3	182.6
1927	Not available.				Est. 152.3

In a general way, perhaps, it may be said that the year 1927 has been one of adjustment and assimilation in the cotton market. The low price levels caused by the low surplus crop of 1926 have been adjusted to the relatively short crop of 1927, while the processes of digesting the big production of 1926 have made remarkable headway. The year 1928 finds the market looking forward to the probability of a medium crop for next season and, in that event, to a fairly stable raw material with a fully normal volume of distribution.

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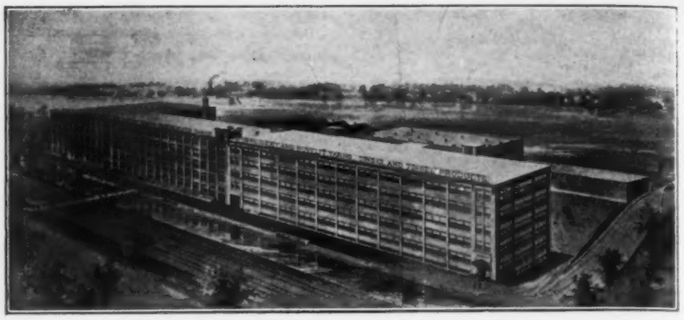

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Cooperation Hailed as Foundation on Which Progress In Men's Wear Industry May Be Built

The Year Brought Market Nearer to Ideals Visioned by Trade Leaders

RECOGNITION that cooperation is the first and essential step in correcting industrial mal-practice and in bringing stabilized profits into existence, is perhaps the prime achievement of the year 1927 in the field of men's wear woolens and worsteds. For several years the theory of cooperation had been gaining adherents in this industry, but not until the year just past had the conviction spread to a sufficiently large number to get constructive action on the subject. Even now there are doubting Thomases who see no cure save cooperation for trade ills, but who doubt that their particular industry can be brought together on a program. Those more optimistically inclined believe that a foundation has already been laid which may be successfully built upon during coming years.

1928 a Turning Point

The men's wear industry has not learned its lesson in any sequestered private school, but rather in the school of hard knocks and the lesson is probably all the more deeply ingrained for that reason. Recent years have been painful, losses have been tremendous, many mills have gone out of business, some perforce and others by voluntary liquidation. The battle-scarred veterans who remain are much in the mood to do whatever is necessary so that past anguish may never be repeated. On this account the year now opened is a turning point in the life history of the industry.

All through 1927 there was constant complaint in all but few quarters over the state of business. Everywhere were indications of an industry poorly adjusted to carry on under the changed conditions which the last few years have brought upon it. The names of the successful mills are known to nearly everyone in the men's wear trade, and their methods are more or less open to examination, but for the rank and file of the industry they appear impossible of emulation. Much of the industry's production in the past has been guided blindly, the many following after the leadership of the few, with the result that most highly successful fabrics were quickly overdone. An excess of productive capacity has led easily to overproduction and that in turn to weakness and prices entailing loss.

Statistical Basis Developing

An exchange of information on production, sales, deliveries and stocks has proved a saving grace in other industries and the plan now at work in the wool goods trade gives promise of similar success. As it becomes more and more complete it will throw light on the industry's condition, and guide those who are open to warning, away from the manufacture of goods the sales of which have fallen off, or where stocks are accumulating.

A companion piece to this cooperative effort is the development of a uniform system of cost accounting. It is the belief of many that price cutting is often the result of ignorance of true costs. Often the over-all costs may be quite accurately known, but the actual costs of various lines going through the mill at the same time may be much in error. If profit in one line covers up loss in another, not only is that mill not making the profit it should, but it is damaging the market for all its competitors in the latter fabric, without substantial gain to itself. During the coming year it is hoped that steps may be taken to spread better knowledge of costs and perhaps to set up a uniform system.

Move Closer to Consumer

Another trend which has made progress during the last year is the effort of the manufacturer to get closer to his trade. This involves several phases. In the first place, for proper style inspiration it is necessary that more recognition be given to the place of the retailer. The clothing manufacturer gets his style information largely from the retailer, and progressive factors on the primary market recognizing that this source is open to them also, are making good use of it. They find a dollars-and-cents gain from their contacts with the retail field, as they are enabled to present to clothiers the sort of goods which they suspect quite accurately in advance the retailer will want from the clothier. The latter is hungry for such goods.

The other phase of the movement to get closer to the actual market is to be found in the recent instances of mills giving up their commission selling representatives and opening direct selling offices of their own. A move of this kind is particularly attractive to the mill which has made a reputation for itself. It seems at the moment to be of least value to the small and relatively unknown mill. Criticism has been heard along with this movement of the principle of selling on commission, the objection being taken that it encourages an effort for volume at any price with resultant losses to the mill, when that price is depressed to cost or lower. The suggestion has been made that the seller should get instead of the commission, a salary with a bonus based on the extent of the mills' profits.

During the course of 1927 more large manufacturing units formerly concentrating on women's wear have turned to the men's wear field for business. In instances the move gives every evidence of permanency, and organizations have been expanded or wholly new ones built up, for the purpose of catering to clothiers. As the style element has become one of the leading selling points in the men's wear field, as it has been for many years in women's wear, these concerns may prove worth watching closely because of their previous experience in handling a multiplicity of styles and quick style changes.

Many of the weaker men's wear mills have been falling by the wayside during the last year or two, and this reduction in machinery, while salutary, has been somewhat compensated by the former women's wear machinery which has entered the men's wear field. Several organizations known in the wool goods industry for decades passed through voluntary liquidation during 1927. Apparently they saw no further use in dissipating their assets in the uphill fight to make a profit. It was estimated that 65% of the industry's machinery could have taken care of clothiers through the year. During the late spring and summer many mills shut down. Some few reopened during these last few weeks, but many of them are out of the picture probably for all time.

Industry Lacks Flexibility

When manufacturers regard the profit margins which the clothier and retailer work with, and consider their own losses, they have wondered during the last year whether they were in business to spend money so that their customers might profit. Merchants who have looked into the clothing business to discover if possible the secret, find it in part in the great flexibility of the clothing industry as contrasted with the rigidity of the cloth industry, in meeting changes in volume. There is apparently a large number of small clothiers on the fringe of their industry, who go in and out of business as the chance for profit rises and falls. The amount of capital involved for a small clothing operator is small, and as the small man is the first to feel the pinch of contraction of business, he is the first to be forced out. The larger houses in the business ride along on more or less even keel. The woolen mill, however, must have a large sum of money tied up in plant and equipment, and its owner will endeavor to run through a poor season with hope of profit in the next with the result that production has not been gauged to distribution and adaptation to changed demands comes painfully and slowly. It will be remembered that Mr. Whiteside in his first analysis of the industry's position estimated that the woolen goods business lost $30,000,000 during 1926. It will also be remembered that a number of wool goods men went very seriously into the machinery scrapping business, buying up looms when selling below a certain specified price and breaking up the frames.

The Rise of the $22.50 Suit

One of the year's outstanding features was the great development of the $22.50 suit in retail circles. This range did not reach its position of prominence over night, and it has been in fact the growth of several years. Its center is in the one price store, which is often a direct outlet for a clothing manufacturer. Popular support of this movement has been such as to bring the old line clothing manufacturers to include lines for that retail price range as a matter of self defense. Better and better goods appear to be going into the $22.50 garment, though around $2 per yard is regarded as a necessary average. Better goods, running up to $3 or more have been seen in the popular priced garments but in some cases they were probably sacrificed goods or perhaps bought for their window dressing qualities with the mental reservation that they would be shown only in the slowest selling sizes.

All through the year there was a definite drive on the part of mills to get much of this $22.50 business and as a result there was excellent and carefully thought-out styling from $1.75 to $2.25 per yard, but, according to buyers, a great dearth of good things from $2.25 up to almost $3 per yard. Goods higher than this in price differed more than usual in styling from the cheaper goods because of the clothier's guess that the wearer of a $65 suit would not want to take a pattern popular with the $22.50 stores. Were it not for conservative manufacturing, the cheap goods end of the market might have been decidedly overdone during the last six months, so great was the drift of manufacturers toward those lines.

One of the elements which has helped popularize the $22.50 garment is the fact that the retail price of garments for years has borne little relation to the intrinsic value of the fabric used in them. A $1.50 fabric may appear in a suit at $50, while around the corner a $3 fabric may appear in a $25 suit. Although good tailoring counts for much, the consumer's recol-

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lections of a garment are most often coupled with its wearing qualities. The challenge to the higher priced garments and the fabrics they are made from, is for dignity of style and satisfactory durability, both of which are difficult to obtain for little money.

A Year of Many Movements

In addition to the matters touched on above the year of 1927 witnessed much discussion of industrial advertising and publicity campaigns, delayed seasonal openings, action against style piracy, firmness on prices, cooperation between mills and clothiers, improvement in market personnel, better merchandising and strict avoidance of waste. In the latter category work is being undertaken to avoid wastage in the designing of a large number of patterns which never sell and in handling the whole matter of samples, particularly reference samples. Regarding the latter several houses have lately set close limitations.

The fabric outlook for the coming year involves the usual clash between woolens and worsteds. Some sellers expect a greater worsted business in 1928 because they say the college man wants more worsteds and they believe that he is the root of all fashion. On the other hand the call for good appearance at low price, which seems to be typical of the current market, gives a greater opportunity for woolens and the call for subtle colorings gives woolens still another advantage.

Fall Start in 1927 Slow

The first price naming during 1927 was the opening for fall which took place in February. These figures were slightly higher than the spring basis, but 5 to 10% lower than the fall opening of the year before. At the start there was great lack of initial business. Lines with a high reputation were the only ones which made any show of success. Clothiers seemed to be boiling their sources of supply down to seven or eight houses. Lack of general style authority made it difficult for the clothier to anticipate on highly styled goods for a season six months away.

In March, 10 or 12 of the American Woolen Co.'s woolen mills shut down and there was feeling of pessimism about the clothier's method of doing business. Even by April it was estimated that only 15 to 30% of the fall needs had been covered. In May however there were revived signs of strength. Duplicates began to come in and a few houses advanced prices 5c per yard. The movement in tropical weight goods was large and there was a spot shortage with grays much in demand.

In June came the Whiteside meeting with the hopeful glimpse of what cooperation might do for the trade, and there were further advances up to 10c per yard. Tropicals opened for the 1928 season at about par with the year previous. There was an unusual diversity of styles. In July came evidence of returning strength in the raw wool situation and the foundation was laid for the rise which took place later in the year.

The offering of spring goods for men's wear was concentrated largely in the last two weeks of August and was one of the most compact showings ever made. It was estimated that goods were 2½ to 10c higher than the year before. There was marked increase in lines prepared for the $22.50 suit, which means around $2, and in the ranges between that figure and $3 there was a rather marked paucity of careful styling. The initial business came with a rush, but by the middle of September tapered off and left the market not so much better off than usual. There was no last minute rush for fall goods and the rising wool market left clothiers cold. Goods prices however gradually reflected the change in the raw material, and increases of around 5c per yard started in October and continued right through to the present time. The weather on the average was unfavorable through the fall and retailers were not called upon to supply more garments than their regular coverage had prepared for.

The call for oxford gray in the darker shades was one of the features of the fall trade which may hold interest for another season. During the last few weeks interest has spread to several new colors including gray-greens and gray-blues. Small neat patterns verging on the semi-staple are considered best in the higher priced lines, though the rather large bold patterns still persist in the cheaper goods. There is no hope for return to big volume trade on staples as yet, though sellers hope that there will be no loss of ground in this field during the coming season. Camels hair coatings entered into a great sweep of popularity last fall and new numbers as heavy as 40 ounces to the yard were put out.

Fiber Substitutes Arrive

A new entrant into the field during the closing months of 1927 was the China grass wool substitute. This is being prepared in a number of quarters in a way that makes it easily usable with wool and the product has no appearance of a vegetable fiber mixture as has the cotton-wool mixture. Further development of fibers that may supplement wool is one of the interesting possibilities of coming seasons.

Delay of seasonal openings is urged, with some factors favoring April and October for fall and spring openings respectively, instead of February and August. Actual development seems to favor this change.

Women's Woolens Are in Fashion

Lessons of Poor Dress Goods Year Lay Strong Foundation for 1928

WOOL goods for women's apparel face a better prospect for the coming year than they have seen for a long time. This is due in part to an apparent turn of fashion in their favor, and in part to the fact that a smaller wool loomage is pressing for orders in the women's wear field than heretofore.

The present view of the vogue for spring indicates wider use of both woolens and worsteds in dresses, suits, and ensembles, utilizing in particular some of the lighter weight goods which after several seasons of offering are beginning to make an impress on the market. Garment houses are beginning to make preparations for this vogue, but knowledge of its real extent must wait until the consumer has shown her preferences in the retail stores. Silks and cotton goods, which have long held the whip hand in the dress field are not going to give up without a struggle and it may take another season before the evolution back to the wool fabric shows itself in a way to benefit mills.

Less Machinery Seeking Orders

The secondary fact that less machinery is seeking employment in women's wear wool goods is a statement made without actual statistics. It is based, however, not only on the fact that considerable machinery has been shut down, but upon the additional fact that most of the big organizations prominent for years in the women's wear field, have put in men's wear departments and thus diverted much of their production into another channel. This trend has been on foot for several years, but during the last 12 months it has become almost all-inclusive. Rumor has it that several of the last women's goods mills to fall in line will present men's wear offerings in the near future for the fall season. Of course this action increases the competition in the men's wear field, but it relieves the women's wear industry of some of the selling pressure which in recent seasons has made for cut prices and profitless mill operation.

The manner of selling fabrics for the women's wear trade is undergoing evolution. Time was when the spring and fall openings were held in August and February respectively, each about six months ahead of the earliest retail business that might be expected. As style grew more and more of a factor with the advent of fancies and the decline of staples, this long distance anticipation became impossible for the garment manufacturer. Various devices were tried by sellers without success, and the market has gradually fallen back to the conclusion that it is best to adapt selling as well as possible to the needs of the situation. Most houses are now selling their goods closer to the consuming season than ever before. Although a number hold seasonal openings they are delayed a month or so from the old schedule and supplementary lines are shown as the year progresses and needs arise.

The mill with the greatest flexibility is winning out in the race today. A few have gone so far in adapting themselves to the new conditions that their owners are willing to say that the present scheme of things is better than that of the yesteryears. The buyer is frankly unwilling to carry a stock or to make advance commitments on goods, the vogue for which may change over night. He must wait until the last possible moment before acting on patterns, textures and colors. Many items of considerable promise early in the season will be dead issues before the season is over and as a result quick turns are necessary for safety and profit.

Mills which still try to gain an early business, may be only laying up trouble for themselves by loading their customers with contracts for goods they may have no need for when delivery time comes around. The fact that former seasons were often blighted by cancellations, was partly a result of this lack of recognition of changed conditions. Without large orders ahead, mills are free of the cancellation bogey. If they follow style demands closely and offer timely merchandise they will attract a steady stream of small orders month by month, which will keep machinery turning and probably show a balance on the right side of the books. Many mills are working themselves into this policy and 1928 may show benefits gained by better understanding of the situation.

Trade in 1927 Disappoints

Through the year of 1927 trade was constantly reported as backward and disappointing, except on rare occasions and then only on limited lines of goods. Many excellent appearing fabrics were shown hopefully at the first opening of the year, that for the fall season, but buyers remained indifferent. Some of these lines never made much impression, while the others developed slowly. Coatings as a class did better than other lines, for the reason that their only competitor was the relatively expensive fur, while in the dress end of the business, silks and novelty cottons held dominance in the consumer's fancy. In May the prices of several of the more successful coatings were advanced, and some weeks later several lines were actually withdrawn from sale as sold up for the season.

In September came the spring 1928 season showings, and prices were the same or slightly advanced from the previous basis. Great variety of patterns, weaves, fiber combinations, surface effects, weights, etc., was shown, but, as usual, interest from the garment house was hard to rouse to the buying point. A number of small price advances were made in October and November as a result of the much stronger situation which had developed in the raw wool market. In December business began to broaden, but in January of the current year it had shown a tendency to lag again.

A Broadcloth Year

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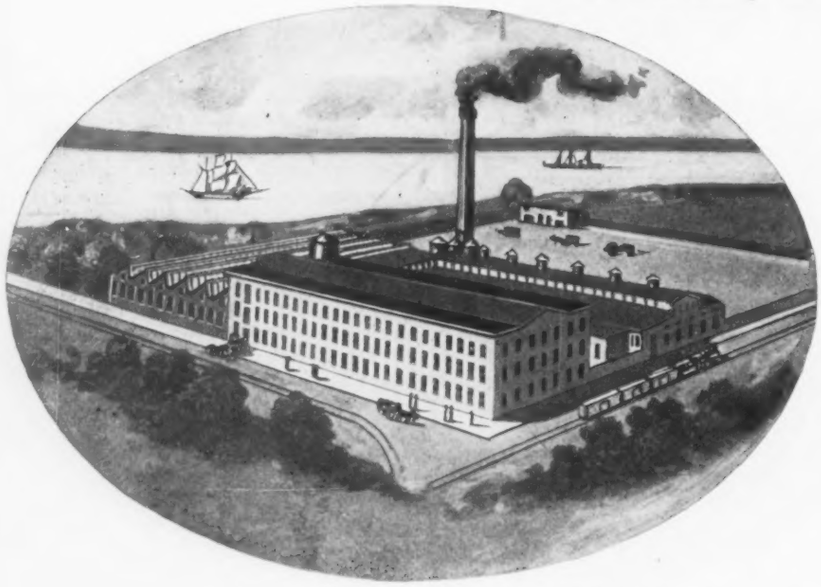

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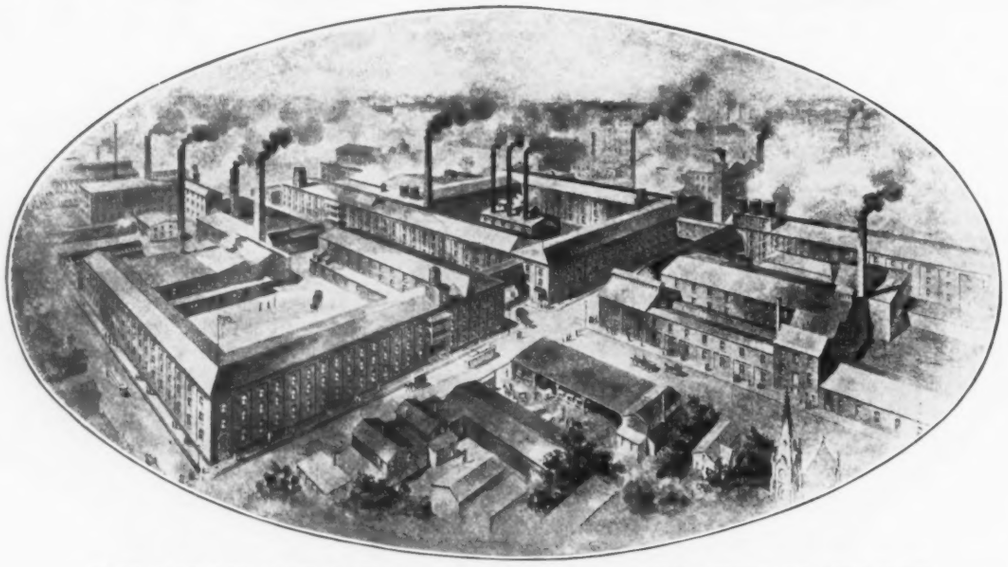

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goods during 1927 was the broadcloth. A variety of broadcloths was shown by style leaders among mills early in the year, but the goods did not get their real impetus until the early fall. At that time there developed a very active market for broadcloths which carried through the winter and left the market in such shape that another good season for the fabrics is prophesied.

Selling houses whose offerings are a good index of style foresaw the possibilities of broadcloth development early in the year. As a result buyers were shown a wide range of weights and surface finishes. There were some unusually light weight goods and many numbers on the heavy end, while the finishes ranged through all degrees of luster from a highly polished surface to a dull one. Black was the favorite color, and the use to which the goods was put was largely coats and ensembles. Present opinion is that stocks are low and that the goods still hold a strong appeal for 1928 selling.

Twills Disappoint

One of the disappointments of the year to many houses was the course pursued by worsted twills. Early in the year there was every evidence that twills in their various versions would be much sought after as the logical fabric for the suit, dress and three-piece costume. Manufacturers had succeeded in diversifying the goods by variations in weight, degree of fineness of the weave and by the introduction of pattern elements. But the time was not ripe for such broad development as anticipated. Mills overdid production and the heavy supply of merchandise became a burden to the market. Trade improved a little in the fall, but the present trend appears to be toward subtle and fancy versions of worsted weaves rather than toward goods of the semi-staple class. Spun silk warps in various weaves are being shown, and in cheap goods cotton warps have returned.

Suede fabrics together with velours had a fair run through the year. Velours were included among those goods the price of which was advanced last spring by large makers.

Chinchillas made a good start but did not broaden out as hoped for. Among the novelty lines shown a year ago were attractive and new plaid-face chinchillas, but the popularity of these goods was limited. Some lines were offered with plain backs while others had contrasting backs.

Novelty Coatings Hopeful

The type of novelty coating which appears to have done best for the current season is the fairly large patterned modernistic triangle or block design in a coarse yarn construction. For the coming spring a similar vogue is expected, though with a refinement in taste as to the patterns, smaller designs holding sway. There seems good authority for expecting a lessened use of fur trimming. To harmonize with this trend and to supply the novelty note otherwise lacking, fabric makers have offered coatings with a fancy selvage suitable for edging the collar, cuffs, bottom hem, pockets, etc. This new departure was hailed as a stroke of genius, but it remains to be seen how the consumer regards it.

In the better grade coatings the needle-point, petit-point, or call it what you will, had a year of success. The high grade fabrics of this nature are slow producers and comparatively few mills make them. Demand appeared sufficient to absorb the productive capacity and the price situation was strong through the year. A number of the best sellers were actually sold up through a large part of the season.

The Course of Flannels

Flannels were of particular importance last spring for use in lightweight summer coats. The lighter the dress, the more necessary the coat, and where some mills have lost dress goods business to silks and cottons, they have made up to a degree by developing a business in coatings which would otherwise not have been called for. For summer coats flannels, chiefly in white and the light colors, were used, unlined or lined with printed challis, linen or dimity. Flannels also gained a place with some classes of wearers for fall dresses and for ensembles of an informal nature.

Sheer Goods on Upswing

The movement toward very sheer worsteds in the form of challis, wool voiles and wool georgettes is going forward. The idea has been operative over a number of seasons, but each season sees new versions which make a consistently better impression with the consumer. In weight, the goods get down to about 4½ to 5 ounces to the yard, and in color, pattern and general character appear interchangeable with silks and cottons of similar nature. As a variation from the two last named sorts of goods, sellers hope for continued growth of the sheer wool goods. As a contrast to these goods comes the recent demand for mannish styles for sport wear this spring, but the light-weight element is still to be discovered here in the promotion of tweeds for dresses and ensembles of a much lighter weight than any hitherto in use.

British Wool Trade Improves

Machinery More Active Than for Three Years — Moderate Optimism for 1928

From Our Bradford, England, Correspondent

ON the whole, the year 1927 has been the best in the United Kingdom since 1924 and fulfilled the hopes expressed 12 months ago. The year 1925 was marred by a disastrous slump in prices, while the promise of the early months of 1926 was belied by the general strike and the coal stoppage. In 1927 the position has been consolidated, and in almost every branch of the industry some ground has been gained. Indeed, at the close of the year machinery was more active and unemployment was less than at any time since 1924.

The raw material end fared the best so far as actual profits were concerned. The general trend of prices, apart from a decline in April and May, was upward; and in the autumn there was a substantial rise which placed values at the highest point since the slump of 1925. Topmakers were not able to exact reasonable margins of profits until the closing months of the year, but they did quite well out of re-sales of wool and of matchings (that is wool sorted ready for combing), mainly for export.

In spinning and manufacturing the turnover improved, but unfortunately margins were exceedingly small. Spinners, for instance, had to work at unremunerative rates until the closing months of the year, when a spurt in demand, coupled with favorable purchases of cheap tops, enabled them to show a profit on most of their business. Colored botany yarns were in better demand than white botany yarns, this being a natural result of the tendency towards fancy goods. Crossbred weaving yarns were comparatively slow of sale until the autumn, when a fairly satisfactory trade was done. Relatively speaking, the largest turnover has been in low single and two-ply yarns for export to Germany. This trade has provided a welcome amount of employment for Bradford combs and spindles, and, as a general rule, spinners and merchants have been able to show a reasonable margin of profit owing to the fact that they purchased their tops before the rise in values had seriously got under way.

In the manufacturing branch, the woolen trade did better than the worsted trade up to about the middle of the year. There was then a slight decline, mainly due to depression in the heavy woolen district, which brought the woolen trade practically back to the position it occupied at the close of 1926. On the other hand, the worsted industry, after failing to show any marked change until the autumn, then revealed a perceptible increase of activity which left it appreciably better than at the corresponding period of 1926.

The closing months of the year witnessed an unfortunate dispute with regard to wages. The employers gave notice to terminate wage agreements at the end of November. The operatives in reply suggested a joint inquiry into various matters affecting trade prosperity, including the imposition of safeguarding duties on imported tissues. The employers were willing to consider these points providing the wage question was first disposed of. The operatives refused to give priority to wages, and consequently the agreements lapsed. No cessation of work took place, however, and wages have been paid on the old agreements, but as it is open to the employers at any time to raise the question of a revision of wages, the outlook for the future is a little uncertain.

Wool Consumption

The quantity of virgin wool (excluding wool from sheepskins) retained in the United Kingdom during 1927 (12 months ending November) in comparison with 1926 and 1925 is shown below:—

	In Million Lbs. 1927	1926	1925
Foreign and Colonial wool:			
Imports	824	811	727
Re-exports	355	338	339
Retained	469	673	388
British wool	57	61	56
Total retained	526	534	444

Although the quantity of wool retained in 1927 was less than in 1926, it is clear that the actual consumption of wool must have been greater than in 1926, stocks being drawn upon to a substantial extent. It is estimated that the consumption in 1927 would be about 550 million lbs. compared with 510 million lbs. in 1926 and about 460 million lbs. in 1925.

Machinery Activity

In the United Kingdom there are unfortunately no returns of machinery activity, but the following percentages of unemployment give some idea of the trend of events:—

End of:	Woolen & Worsted %	Hosiery %	Carpet %
May, 1924	4.7	5.0	5.0
June, 1925	9.7	9.4	10.6
April, 1926	9.7	6.2	14.4
May/June, 1926	24.9	18.7	29.7
Nov., 1926	14.2	7.7	11.0
Nov., 1927	7.1	3.7	4.5

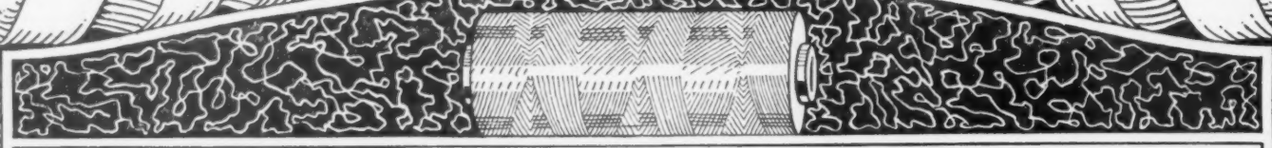
These percentages, of course, include workers who are only on systematic short time. Another useful series of figures is provided by the regular returns from employers who employ about two-thirds of the total number of workers in the industry. The aggregate wages paid in a given week in each month are obtained and expressed as an index number based on the figures for January, 1926. The following table gives the salient dates:

	Sorting and Combing %	Worsted Spinning %	Worsted Weaving %	Woolen Industry %
June, 1926	100	100	100	100
Aug., 1926	75.4	86.8	87.5	101.2
Dec., 1926	88.6	99.1	99.0	104.6
July, 1927	96.1	99.0	95.0	113.2
Nov., 1927	97.0	107.3	106.2	107.9

These figures show clearly how the woolen industry, after a period of activity in mid-summer, registered a decline toward the end of the year, while the worsted industry finished the year appreciably better than it started, and in the sorting and combing sections machinery activity was restricted by lack of supplies of raw material.

The Export Trade

The export trade accounts for nearly half the total production of the



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industry, and in 1927 it was substantially better than in 1926 so far as semi-manufactures were concerned (mainly owing to German activity), while the exports of tissues showed a recovery in the closing months of the year which brought the twelve months' total slightly better than in the previous year. So far as the exports of tissues were concerned, almost all the markets except Canada and China showed an improvement.

The following statement shows the principal features of the export trade, the figures for 1927 being for the twelve months ending November:—

Exports of:	1925	1926	1927
Tops (mill. lb.):			
Total	32	33½	42
Germany	8¼	6¾	11½
Worsted yarns (mill. lb.):			
Total	39	32	44½
Germany	20	12	22½
Woolen & Worsted: Tissues (mill. sq. yds.)	180	163	168

In 1924, 67 million sq. yds. of tissues were sent to China and Japan, whereas in 1927 the quantity was only about 27 million sq. yds.

The Piece Goods Trade

In men's wear, tweeds were the most popular line throughout the year, not only at home but also abroad. Substantial quantities of the best-class productions have been sent to Germany and to the United States. The finest botany worsteds have been in steady demand, but this is a luxury trade of limited dimensions. The demand for medium-quality woolens suitable for the ready-made clothing trade was good until the second half of the year. In overcoatings the season was a good one. The heavy woolen district suffered a setback late in the year. For women's wear, tweeds have also been wanted, particularly for sports wear. Dress goods manufacturers have once more had a difficult year, but there was some compensation in the last few months, when repps of the botany style but made from fine crossbred wool found a ready sale. In charmelaines it was only the highest-class goods which sold freely. Both artificial silk linings and mohair linings have been made in increased quantities.

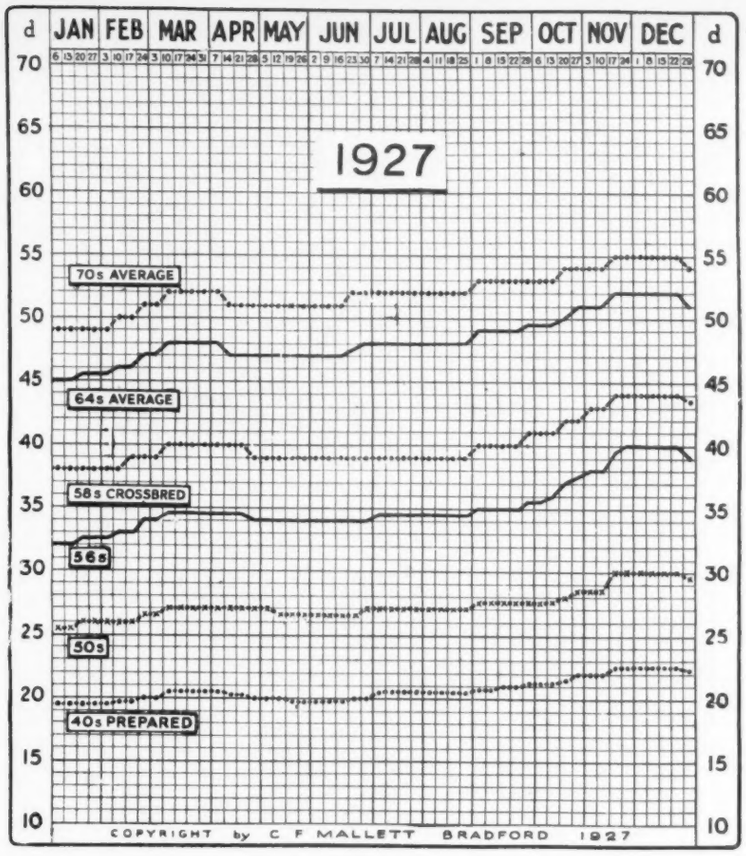
The Price Position

Prices finished in 1926 on a basis which was generally recognized as being reasonable, and at the end of 1927 they showed an appreciable advance on a year ago. The following table gives the prices realized in London for combing fleece wool, first cost, clean, London, without oil, according to Kreglinger & Fernau's figures:—

Per lb.	July 1914	Dec. 1925	Dec. 1926	Dec. 1927
	d.	d.	d.	d.
70s super	32	61	49	53
64/67s good med.	30½	50	44	49
60/64s good med.	30	45	40	46
56s fine crossbred	26	30	29	37
46s crossbred	17	20	19	23
36/40s crossbred	15½	17	17	21

The largest proportional advance of the year is in 56s.

In Bradford tops the position is shown herewith:—



Average Prices of Tops at Bradford, England, During 1927

Per lb.	July 1914	Dec. 1925	Dec. 1926	Dec. 1927
	d.	d.	d.	d.
64s merino	32½	50	46	53
58s crossbred	26¾	39	38	44
56s crossbred	24¼	33	32	40
50s crossbred	20¾	27	25½	30
40s prepared	16	22	19½	22½

The following table shows a few prices of representative qualities of yarns:—

Shillings and Pence per Lb.	July 1914	Dec. 1925	Dec. 1926	Dec. 1927
	s. d.	s. d.	s. d.	s. d.
2/48s botany (64s)	3 3	5 8	5 4½	5 10
2/40s (56s)	2 10½	3 11	3 10	4 5
2/32s worsted med.	1 10	2 11	2 9	2 11
2/16s worsted med.	1 8	2 3½	2 2½	2 5

Prices published by the Wool Textile Delegation show that indigo serge at the end of 1927 was from 80 to 95% dearer than in 1914.

Outlook for 1928

It is generally agreed that wool values, although appreciably higher than a year ago, are still on a sound plane. For three years in succession, despite the fact that bad trade has been the rule in the majority of the consuming countries, there has been an inconvenient shortage of wool in the autumn just prior to the marketing of the new clips. This was also the case during 1927, and consequently the new wool season has started with light stocks. Moreover, during the coming season the commercial supplies of wool will show a slight reduction, especially in Australia, where reduced sheep numbers and a lighter yield of wool per head have to be reckoned with. Consequently the price level during 1928 should rule higher than during 1927 on the average, and it is probable that in the autumn there will once more be a temporary squeeze for spot supplies. Stable or rising wool values are always necessary for improved trade.

From the point of view of consumption in the United Kingdom, it seems hardly likely that the very heavy export trade in tops and yarns on German account will be maintained. Already there are signs that German customers do not wish to take up their contracts so speedily as had been anticipated. This may affect the turnover in tops and yarns; but on the other hand it seems likely that there will be compensation in the shape of increased demand for hosiery and weaving yarns from home manufacturers. The turnover in fully-manufactured goods for the home trade certainly shows a slight improvement, which is expected to be maintained during 1928. The export trade in tissues is also showing a definite tendency toward expansion.

Taking the position all round, therefore, it is expected that 1928 will be a year of rather larger turnover in piece goods than 1927, though nothing in the nature of a boom is anticipated, and spinners and topmakers will probably have to reckon with a reduced export trade. An equally important consideration, however, is the question of margins of profit. Spinners in recent years have only been able to make ends meet by a profitable speculation in the buying of tops. It is hoped that during 1928 a gradual expansion in demand will enable spinners to operate more successfully from a financial point of view. This hope would be negatived, however, if prices showed too strong an upward tendency. Manufacturers also have been working on lean margins, but here there is definite evidence of an expanding demand which should help towards obtaining better profits.

One cloud on the horizon is with regard to the wage dispute, which may develop into a crisis at any moment should the employers regard the period as a favorable one for forcing reductions. The desire for industrial peace, however, is so strong that it is hoped, and indeed expected, that no serious industrial trouble will mar the moderately bright prospects for the year 1928.

Carpets Had Difficult Year

Prices May Have Touched Bottom After 1927 Decline and Slow Trade

THE last twelve months have been difficult for manufacturers of carpets and rugs, the volume of business placed during 1927 being small in comparison with recent years and profit margins have been small or non-existent. Conditions at the beginning of last year were regarded as favorable by the trade for a fair year's business but they did not materialize for a large majority of manufacturers. While it may safely be called a woolen carpet year, the bulk of orders going to manufacturers of woolen-faced goods, the outstanding development from the worsted standpoint was the expansion in demand for worsted carpets and rugs, this trend being more apparent than for several years. This period has been marked by a second important trend, sales of carpeting increasing to an important degree at the expense of rugs, which have held the center of the stage during recent years.

A large portion of carpet and rug business during 1927 was for contract goods, carpets to be used in buildings such as hotels, apartment houses and other places with large rooms where carpets were favored against rugs. Axminsters and woolen wiltons have been the best sellers during the year. The fact there were three auctions held during 1927 illustrates that it was an unusual year for the carpet trade, two being the normal number of sales scheduled per year by the Alexander Smith & Sons Carpet Co. The usual auctions were held by this company in April and September, while the third sale was in December. Prices realized at the April auctions while not so high as had been predicted by the trade, were such as to indicate a good season for manufac-

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turers. But again they were disappointed, as buyers did not operate to an extent large enough to improve conditions among the mills.

Lower Prices in September

Auctions were held again in September when prices 5% to 15% above those realized at April sales were paid and again prospects for a larger volume of new business with manufacturers were considered good. Although a slight increase in trading became noticeable after this sale, the spurt was not sustained as was indicated in no uncertain manner in December when the Smith company unexpectedly announced and held the third auction of the year. That distributors were still in control of the situation was proved when prices were lowered 7% to 15% at the last sale of the year. Lowering of prices coming at a time of the year when manufacturers had already completed the bulk of holiday business and when normally a majority were involved in annual inventory taking, had the effect of practically bringing the carpet and rug trade to a standstill and the year to an unsatisfactory ending.

Carpet wool prices at the beginning of 1927 were on a basis of 45c to 50c per pound, clean basis, comparing with a range during the previous year between 50c to 52c as the top and 42c to 45c as the low limit for 1926. Later in 1927 carpet wools became easier and the low limit of 1926 was bettered, prices in December declining to a clean cost of 40c to 45c and there were a number of distress lots of carpet wools being offered at that time below 40c clean, this trend being especially noticeable in China, Cordova and Awassi wools. Primary carpet wool markets displayed a firm and steady trend during the year, making it difficult for wool dealers to replenish stocks and sell at prices spinners were willing to pay for spot wools. The market level in this country did not follow that of foreign carpet wool centers, a factor that had a tendency to further retard operations by spinners and dealers.

Spinners' Position Difficult

While carpet wools became easier at the end of the year, spinners claimed that this in reality did not benefit them as they found such distress wools in a majority of instances to be inferior and cost the spinner in the end as much as they had paid earlier in the year. Spinners of worsted yarns claimed they were able to do no better than break even with 3-2-16s selling at 91c and 92c and compelled to pay around 50c clean for their wools. Notwithstanding this claim of spinners there was a noticeable easing of wool prices during the latter months of the year, larger shipments from China resulting in an easier situation in these wools than occurred during the year 1926. As this country is a large consumer of China wools for carpets, this had an important bearing upon the raw material market. There was a similar tendency noted in Cordovas late in the year and primary markets joined this movement, although reductions were not of important size.

Worsted spinners believe the larger use of worsted-faced goods in evidence during the last year, will continue during 1928 with the probability that this will expand, many feeling that the turn in the market from an almost exclusive use of woolen-faced carpets and rugs, is just getting under way. The trade is also optimistic as stocks of goods, yarns and raw material have been kept within a reasonable limit and any increase in consumption, will immediately affect spinners and manufacturers this year. Raw material markets are on a lower basis and this will tend to expand demand for carpets and rugs. Another factor which will have a similar influence was the reduction in wages of carpet and rug weavers made effective the first of the present year, giving manufacturers the advantages of lower overhead and the employes more steady employment than they have had during last year. Holding of the third auction sales and the cleaning out of old patterns by retailers at their December and January sales has improved the situation, bringing consuming stocks to a point that indicates more active manufacturing will be necessary during the early months of this year to overcome the decrease in stocks of manufactured goods.

Supremacy of $22.50 Suit

(*Continued from page 149*)

quality as the $15 suit. And in all probability the $22.50 suit will be the biggest seller. But there seems little probability that the $22.50 suit is going to cut much more into the higher priced merchandise.

Some Go Down to $12.75

In the last year there has been some attention directed to clothing at $12.75, through the expansion of a chain selling at that one price. This is a reflection of the interest shown in the $22.50 suit and lower prices generally. But neither the retailer nor the manufacturer regards the $12.75 suit as important. There always is room for some very low-priced merchandise, it is felt, and the stressing of this one price does not mean that there is going to be any increase in this very cheap clothing. It may, however, serve to concentrate the very low prices at $12.75, eliminating the prices between that and $22.50. But at the present time the $12.75 demand does not appear to be important enough to do even that.

The $35 suit is wanted mostly with two pairs of trousers. At $22.50 the call is principally for one pair of trousers. For the most part $22.50 stores sell the extra pair at an extra charge, around $5. They have tried, and to some extent are succeeding, to give two pairs of trousers at $22.50, but this reduces the quality of the suit so much, or cuts the profit so much, that the store has trouble.

Fate of $50 Garments

The third best selling price is $50, or, more generally, $40 to $50, and there still is a lot of business being done in this range, with every prospect that it will continue. The demand at $40 seems to have dropped off a good deal, leaving $45 and $50 the outstanding prices in this range. Probably this is the result of the stressing of $35.

In spite of the downward tendency of the last several years, there still is a lot of business at more than $50, well distributed over the country. In the larger cities this demand for good priced merchandise is strong. In the smaller cities, down to 20,000 or 25,000 population, it is fairly strong. In very small communities it is negligible, and retailers cannot afford to carry that sort of clothing.

Woolen and worsted manufacturers, the cutting-up trades and the retailers all have been too prone to stress the lower price demand in their business, the textile manufacturer by turning out too much fabric for the lower end of the ranges, the cutting-up trade by flocking to the low price manufacture, and the retailer by over-emphasizing price in his advertising and selling. Many of them have lost sight of the fact that an upward tendency has accompanied the downward tendency, especially in the last year.

Consider the situation in New York City. In 1926–7 the outstanding advertising campaign in the retail field, for men's clothing, was the Fabric Group campaign run by Weber & Heilbroner, at $35, $40 and $45. This took the chain to a new low starting point, the lowest price for several years having been $37.50, and the featured price having been $50. The $37.50 merchandise had been a special line, below the regular starting point of $40. But the firm came to the conclusion that its range of $40 to $85 was aiming too high to get many of its logical customers. It tried with the special line at $37.50, with a special advertising campaign, and found the effort successful. So in the latter part of 1926 it launched its $35-$45 campaign, and did exceptionally well. The attention paid to the higher ranges became casual.

Then, in the latter part of 1927, it discovered that it was missing out on possibilities that lay in the higher ranges. Suits from $50 up could be sold, Weber & Heilbroner felt. So another advertising campaign was started on the higher ranges, the Town Series at $55, $65 and $75, and these suits have sold well.

Other merchants, in New York City and in other cities, have tried the same sort of thing, and they have found that the demand for the higher end of the range exists in sufficient strength to make this business profitable.

Cutters Hold Old Prices

A glance at the starting prices of representative clothing manufacturers in the various markets of the country shows that that segment of the apparel industry does not feel that all the business, or even the majority of the business is going to the $22.50 retail price. These figures show that spring of 1928 shows no indication of a further lowering of price. In some markets, it is true, the tendency is downward for spring, usually in houses making high grades of clothing. In others the tendency is slightly upward, not sufficiently to bring about a difference in retail prices but rather to cover the increase in the price of woolens.

In the New York wholesale market, the biggest in the country, the average starting price for spring is $19, and in this market, as well as the others of the country, there is practically no difference between the average starting price for spring of 1928 and fall or spring of 1927. There have been individual changes, but no general change of real importance. A few houses have come down a bit, and a few have gone up a bit. In striking this average of course no consideration has been paid to the volume of business done by each house, which would have to be taken into consideration in getting an exact average. But all the houses considered are important factors.

The New York market contains a great number of small manufacturers making very cheap merchandise, and they could not be taken into consideration in getting the figures. If they were included they would bring down the average somewhat.

In the Rochester wholesale market, which is a good quality market, the average of starting prices is $24.65, the highest of any market in the country. Here there have been evidences of a further downward tendency, some houses that have been starting at $30 to $33 dropping $1 to $1.50. The fact that the average of the market still is high is evidence of the fact that the manufacturers there feel there still is plenty of good business to be had. That average would call for at least a $35 retail price.

The Chicago market, also a good quality market, the average of starting prices is $23.50. Here there have been more increases than decreases, but the general average has not changed materially.

In Baltimore the average starting price is about $20. In Philadelphia, which has come to be known as essentialy a low price market, there are evidences of an advance in starting prices. The average is $21. This is due to the location of new houses in the market, making a better grade than the original houses, as well as to the raising of the standards of the old houses.

In Boston the average is $20. In Buffalo it is $16.75. In St. Louis it is $16. In Cincinnati it is $15.50.

Keeping On—

FELT

Several Uses

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Perches for Unfinished Goods, Finish Perches, Spreading and Rolling Machines, Gigs and Nappers, Sanding and Polishing Machines, Steam Finishing Machines, Cloth Dryers, Cloth Shears, Brushing Machines, Singeing Machines, Chinchilla Machines, Dewing and Spraying Machines, Printing Machines, Rotary Cloth Presses and Winding and Measuring Machines.

Also

Felt for Bar Coverings on Yarn Winders, Felt for Building Up Rolls on Vacuum Extractors, Felt for Clearer Boards, Felt for Lubricating Pads, Felt for Take-up Rolls on Looms, Felt for Rolls Used in Damp Spinning of Tow, Felt for All Rolls That Must Have Friction Surface and Felt Washers for Worsted Drawing Machinery.

Only first-quality felt can Keep on *giving uniform tension*

STRONG, live felt for the take-up rolls on your looms . . . for the draft and friction rolls on your finishing machines . . . for your clearer boards. Felt as friction washers on your worsted drawing or roving frames. Felt wherever you may use it.

It's only first-quality felt, properly and particularly made, that keeps on giving the same uniform tension . . . that keeps on the job longer . . . that always proves most economical in the final test. You can look to American Felts for these "built-in" qualities—and get them!

For American Felt Company's felts are made by an organization as particular as its most exacting customers—an organization backed by many years of sound experience in advising mill men . . . in recommending the grade of felt best suited to each textile requirement. Our customers profit by all this. *Write us for quotations.*

American Felt Company

TRADE MARK

213 Congress Street, BOSTON, MASS. 114 East 13th Street, NEW YORK, N. Y. 325 So. Market Street, CHICAGO, ILL.

Worsted Spinners Acquire Cooperative Viewpoint As Evidenced by Their Cost Survey

Will Increase Efficiency of Individual Plants and Standardize Costs—Satisfactory Volume of Men's Wear Yarn Business

WORSTED yarn prices were more stable during 1927 than in the previous year, prices of a majority of counts not varying more than 10c during the last 12-months' period, while in 1926 a more important change was seen during the same length of time, prices declining to a marked degree. Although stability is recognized as a desirable characteristic in the market, the fact that yarn prices were stable resulted last year to the disadvantage of spinners as wools advanced to a marked degree during the last half of 1927 and the inability of spinners to merchandise their yarns on a higher level in proportion to raw material advances meant a further contracting of their already admittedly small margins. The year 1927, like other recent years, illustrates that production and the productive capacity of our machinery are still greater than our consumptive requirements.

Liquidation and scrapping of old and obsolete spinning equipment progressed during the last year and a start in adjusting this situation has been made but a great deal along this line must still be done before a balance between production and consumption will be obtained. The spinning industry is, of course, not the only one facing this situation. A majority in this country expanded during the war years to an extent that made their peace-time production far in excess of a normal demand. Many other industries have already made major strides toward an adjustment of this condition and have enjoyed prosperous conditions during the last two years.

Not a Profitable Year

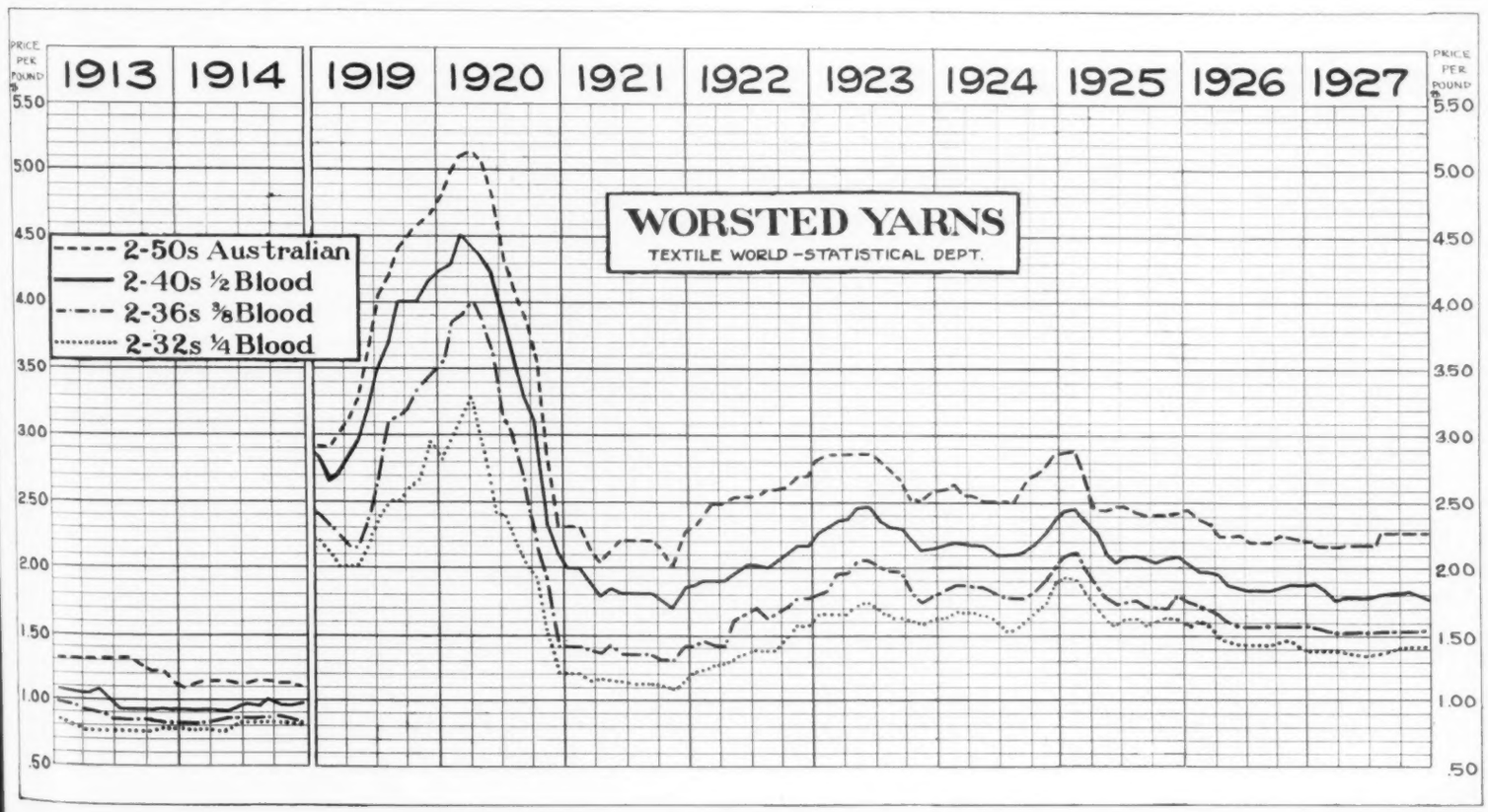
Worsted spinners have not made sufficient progress along these lines to have enjoyed prosperous conditions in any year since the war boom. While there have been attempts made by spinners to adjust this by cooperative efforts, it is still apparent this trade has been slower than many others in making attempts to remedy their condition. Leaders in the worsted spinning industry have found to date a relatively small proportion of spinners willing to even consider cooperative efforts to better the whole industry, and the work of these leaders during the recent months has been to educate the industry to a point where they will be more favorably disposed during the present year.

Unfortunately there has been some ground for justifying this attitude on the part of many spinners in the past as previous attempts to act in conjunction in several matters have not been altogether successful, an example of this being the failure of spinners to adhere to the new selling terms of outerwear yarns. Remembering such instances, it is not difficult to realize that such influences among spinners must first be counteracted before a proper attitude will be had toward new and more far-reaching cooperative efforts along other and more important lines. A great deal has been accomplished during 1927 and there are indications that the fruits of this ground-work will become more apparent during the present 12 months and result, as has been true in other industries where a group consciousness has been developed, in more prosperous conditions in the entire industry. It has been difficult for spinners to change their thoughts from the individual standpoint to one that believes success of the entire group must be secured before the individual mill can expect prosperous conditions over any length of time.

Cost Survey Started

One of the evidences of a change in spinners' viewpoint on such matters was witnessed when it was learned in June last year a cost survey of a large number of worsted spinning concerns was to be made under the auspices of the National Association of Worsted & Woolen Spinners. At the completion of this survey each mill was to receive a standing, showing which department was efficient and which departments should be improved to bring them up to a fair average. It was stated the survey would be one means of placing the spinning business on a common ground. Recent reports indicate more than 25 spinners have had such a survey completed and others are now joining this move, after seeing the results that have been secured through the initial group.

Many leaders in the spinning trade regard this cost survey as the first step in a cooperative program and from the surveys already completed much necessary elementary work along these lines has already been accomplished. There has been found to be a wide difference in the efficiencies of various departments in mills making the same character of yarns, and through the survey spinners having such departments will



WORSTED YARNS

William Crabtree & Sons

Manufacturers of

Worsted Knitting Yarns in white, colors, oxfords, and heather mixtures

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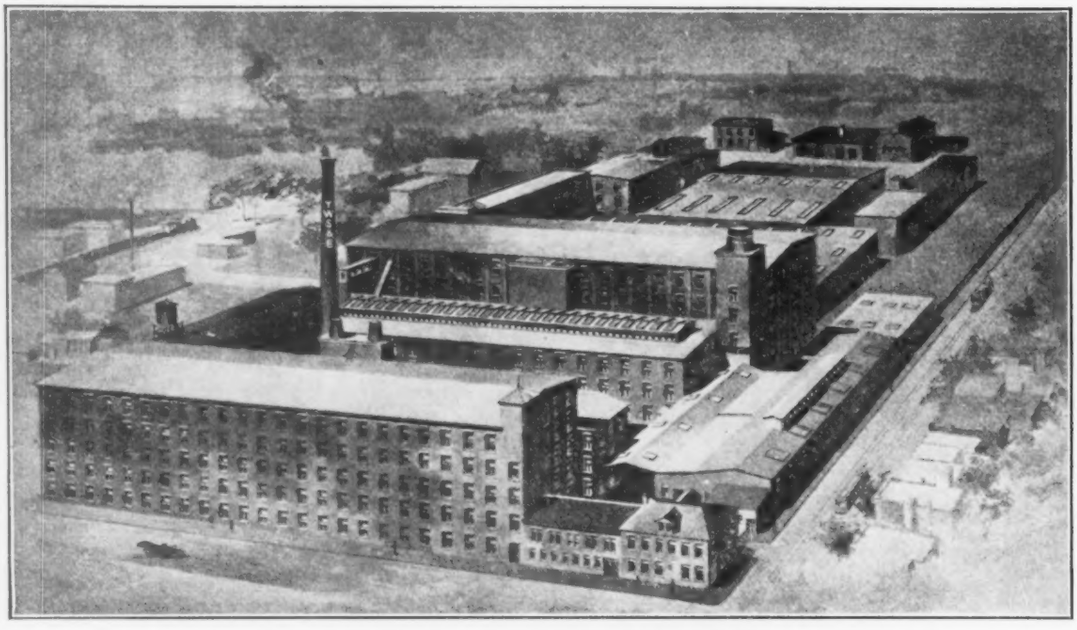
Mills: Montgomery, N. Y.—Newburgh, N. Y.

Thos. Wolstenholme, Sons & Co., Inc.

Frankford Ave. & Westmoreland St. Philadelphia, Pa. P. O. Station "E"



UNDERWEAR
HOSIERY
SWEATER
WEAVING
JERSEY CLOTH

YARNS

WHITE
COLORS
OXFORDS
AND
FANCY MIXES

French and English Spun Worsted and French Spun Worsted, Cotton Mixtures and Woolsil Yarn

be able to see what can be done to raise their mills to the average efficiency of the entire group. Spinners in this survey need not fear that competitors will secure confidential information regarding their business because the results of the survey are in code and no one mill knows what figures refer to any particular spinner.

Will Increase Efficiency

In other industries where such surveys have been completed, the wide difference between the most efficient and the least efficient mills has been materially contracted and the inefficient plants have made immediate attempts to bring their plants up to the average efficiency for the entire group. This factor alone will result in benefit to the spinning trade as a number of spinners who have been selling yarns greatly under the going market level frequently have labored under the apprehension that they were actually making a profit on such business when in reality, as was seen at the close of the year, they had lost on every pound. With spinners knowing exactly what it costs to produce each count of yarn and to know whether this cost is low or high in comparison with other spinners will prove of great benefit to every concern joining this movement and will result in the elimination of the most disastrous competition that has been general during recent years.

In June one of the largest spinners of outerwear yarns issued a statement to the trade in general in which they asserted that from that time on they would refuse to book business that did not show them a profit. This had a widespread effect upon smaller spinners. Heretofore the spinning trade operated on the surmise that it was better to take business at a loss of five or more cents a pound rather than to close their plants and break up their organizations. That was the policy followed for the previous three years and instead of helping spinners over a period of poor demand it had only weakened their position further until they found themselves operating their plants practically for the benefit of customers. Yarn contracts were frequently taken at a basis that showed the spinner a loss of five cents a pound and no way the matter could be figured, was there the least possibility of the spinner receiving benefit from such business.

Selling Less Than Cost

Indications during 1927 have been that spinners have finally seen the folly of continuing this policy and there is now a more general feeling in the trade that each order should at least show the spinner his cost price and that under no consideration is it wise for him to take business simply to keep as much of his machinery as possible in operation. Pursuing this policy, they have come to understand results merely in a gradual and continuous weakening of their position and contracting of already admittedly small margins. Spinners during the last year have also come to the opinion that running on stock yarns,, in the end can only benefit their customers, and a large majority of spinners have decided to follow the prevailing mode of working on a strictly hand-to-mouth basis, making up yarn only on order. Adherence to this will result in improvement in spinners' position during the new year.

Advance in wool markets during the latter half of 1927 was and continues to be another factor that is more likely to result in benefit to spinners, giving them in many instances the opportunity of making a profit on their raw material though they are unable to secure replacement prices for yarns. When wools decline as was true during the previous two years, spinners find it necessary to take a loss on wools before they are consumed and the buyer of yarns is always in position to demand yarns more in line with the lower wool basis at the time of the sale. If the wool market continues strong during the present year, this may be regarded as a favorable factor from the spinners' standpoint notwithstanding their inability, up to the present, to sell on a replacement basis.

Weaving Yarn Prices

Although wools advanced during the latter half of the year, an examination of weaving yarn prices during the entire year indicates that these spinners were not in a position to advance yarns in proportion to higher raw material costs. In January, 1927, for example, 2-40s, half blood, were quoted at $1.85 and shortly afterward dropped to $1.80 basis, which continued in effect during many months, dropping at times to a $1.75 or $1.77½ basis which was quoted during the latter months of 1927. Half blood wools, although not as firm as medium grades, advanced along with the rest of the wool market during the second half of 1927 and the fact that 2-40s did not advance is indicative of the position of such spinnners. The need of new business was great and this, in conjunction with prevalence of sufficient spot lots in stock, prevented spinners from securing any higher prices to compensate them for higher prices they were compelled to pay for wools.

Outerwear spinners were the most fortunate in this respect and were successful during the latter months of the year in raising prices, the year opening with 2-20s quarter blood selling at $1.25 and ending with the same count selling at $1.30 and as high as $1.35. While it is true outerwear spinners have secured the largest advances, it should also be remembered that these yarns declined more than any other quality at the middle of the year when competition between the largest factors in these yarns became so keen that prices were cut without regard for spinning costs. At that time a large volume of business was booked by the two largest spinners at $1.17½ and many orders as low as $1.15, the low point for the entire year. One of the most unfortunate developments at that time was the fact that spinners took a large volume of business from yarn jobbers at these lowest figures for the year. As events have since developed, these sales have reacted to the disadvantage of spinners, preventing them from benefiting from higher prices as quickly as possible because jobbers were able to undersell them with these cheap contracts.

Large Knitting Yarn Sales

Notwithstanding this condition, spinners of outerwear yarns have enjoyed the largest volume of business during 1927 that they have had. In 1910 approximately 7,000,000 lbs. of outerwear yarns were consumed while estimates for 1927 indicate that more than 27,000,000 lbs. of these yarns were produced. This represents the large increase in use of these yarns in bathing-suits, sweaters, jersey cloth and kindred lines, bathing-suits manufactured in the United States having become the standard of the world while knitted sweaters have been sold more actively during the last year than during any previous 12-month period. During August, September and October, 1927, outerwear spinners stated they booked the largest quarter-year's business they had ever experienced. Although this group of spinners have enjoyed larger spinning margins than spinners of weaving counts, they too have been compelled to operate on small profit basis.

In January, 1927, 2-20s high quarter blood knitting yarn was quoted at $1.25 and declined from this level to $1.20 by the middle of the year at which time there was a large volume of business taken by spinners at $1.17½ and a smaller number took orders as low as $1.15, this being the time when jobbers bought in important volume. In August a strengthening of prices became evident and quotations on this count were raised to $1.22½ to $1.25 and during the fall months they were again advanced, spinners quoting $1.25 to $1.30 during September, $1.27½ to $1.30 during October and higher than $1.30 during December. There was a large volume of buying at the turn of the year and the early fall with comparatively less active trading noted during the last month of 1927 after the advances were placed in effect. Spinners therefore did not benefit from the higher prices immediately, being compelled to delivery on $1.20 contracts during a large portion of the latter half of the year.

Strong Wool Situation

Not only has the largest outerwear business placed before spinners advanced prices to the higher level, but spinners of these yarns were confronted with a stronger wool market than others, outerwear spinners using quarter blood wools to a larger extent which grade experienced the greatest upturn. The wool market advanced more rapidly than spinners could secure higher prices from manufacturers and during the latter months of the year one of the firmest markets in medium domestic wools existed that had been witnessed for many years, spinners claiming, if had they not been in possession of cheap wools they would have been unable to make any profit on 2-20s unless they could have sold for more than $1.35, comparing with actual selling prices of $1.25 at that time. In other words, to do business these spinners passed the advantage of lower purchased wool on to their customers, those not being in position to do so not securing orders.

The year was marked with keenest competition in outerwear yarns that has been seen in the market for many years, two of the largest spinners of these yarns engaging in spirited competition for this large volume of outerwear business placed during the latter half of 1927, which had a definite effect upon the entire market in these counts, making it necessary for smaller outerwear spinners to meet prices named by the two or three largest factors in these yarns. This struggle between these larger spinners became less apparent during the latter months of the year when they realized such a condition was favoring the consumer to such an extent spinners could not continue to do business on that low profit basis for any length of time, spinners' margins for outerwear counts expanding to a small degree during the last two months of 1927.

Competition in outerwear yarns became so severe at one time that S. B. & B. W. Fleisher, Inc., one of the largest factors in the outerwear section of the market announced in a letter to the trade from that time on they would refuse to accept any business from manufacturers unless this showed them a profit and at that time announced an advance of five cents a pound to go into effect within the next few days.

Stopped Selling Below Cost

Other spinners stated that they too would henceforth refuse to sell unless each order showed them a profit and the improvement in spinning margins during the latter months of the year was the result of the adoption of this new policy among the limited number of outerwear spinners. One of the strongest situations in regard to the raw material market faced knitting yarn spinners during the last three months of last year and has been in evidence during recent weeks, there being considerable difficulty experienced by spinners not owning cheap wools to secure adequate supplies. Remaining lots of medium grades of fleece wools were held at prices so high that spinners could not afford to purchase with the hope of selling yarns on the basis current at time of wool purchase. Dealers in many cases reported that they had been entirely cleaned out of bright medium wools by the latter weeks of 1927.

Weaving yarn spinners, Bradford

WOONSOCKET Spinning Company

Fine Woolen and Merino Yarns

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Richmond & Schiller Sts.
PHILADELPHIA

Announce

the reopening of their plant for the dyeing, bleaching and processing of fine worsted and woolen yarns for the knitting and weaving trades.

January 1st, 1928

LINDSEY H. MASON, *President*
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WORSTED YARNS

Weaving and Knitting

WORSTEDS

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COTTON

Twist Yarns; Cotton, Worsted, Silk Twists.

and French, have not experienced the spurt in demand that was noted among spinners of knitting yarns. Demand for yarns for men's wear has been fair during the year and the volume of worsted men's wear manufactured has been normal. That this has been true is seen in many cases where a large number of looms operating formerly on dress goods have turned over to the production of men's wear. Yet a majority of manufacturers of these fabrics have had a fair year with these dress goods looms taken into consideration. Spinners of mixtures and dyed yarns for men's wear have experienced a good year in volume and a number of them report a fairly profitable year, but these are few in number in relation to the total of weaving yarn spinners. Bulk of men's wear business has called for mixtures and there has been little call for yarns for piece-dyed lines. Both Bradford and French spun mixtures have been used, with best business being reported by the latter.

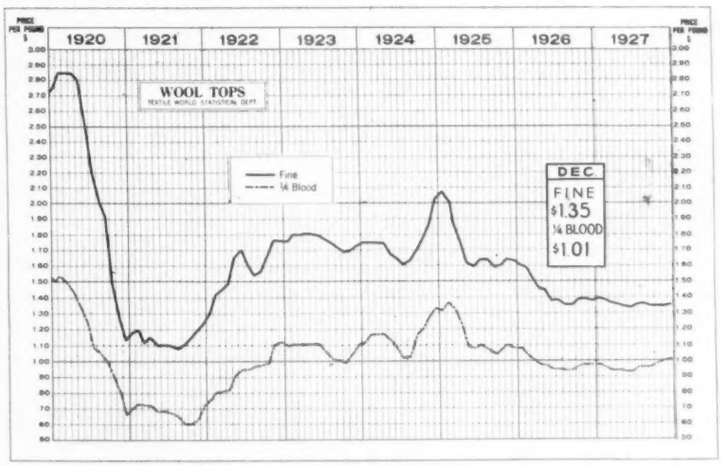
Weavers Buy Carefully

While contracting several months ahead has been noted among fancy men's wear manufacturers, there has been further trend to a more severe hand-to-mouth manner of buying yarns by the men's wear group, manufacturers showing a more decided tendency to postpone buying yarns until they had actual goods orders in hand. Then they would place yarn orders of sufficient size to take care of these orders, not placing business ahead with spinners. As goods buyers continue to buy in a hand-to-mouth manner, manufacturers have followed the same policy, in making yarn commitments. While this is regarded by all as a more conservative way of doing business, it has affected spinners in a more disadvantageous manner than retailers or manufacturers. Spinners were unable to make any profit on yarns, during recent years, unless they had purchased wools at lower figures than were quoted at time of yarn sale.

Spinners, therefore, while confronted with hand-to-mouth selling find that hand-to-mouth buying of their own raw material is not practicable, spinners of knitting yarns in particular stating that at no time during the last six months have they been able to sell based upon replacement costs and had they not bought wool ahead they would have been unable to do business. This condition means that spinners must invest in large lines of wool and hold until the manufacturer needs yarn from time to time, and thereby increases the spinners' risk of doing business, under the present method of yarn purchasing by manufacturers. Weaving yarns have not fluctuated widely in price during the year, 2/40s, half blood, for example moving within this twelve-month period between $1.75 and $1.85, strength in prices being more apparent at the beginning and at the end with lowest quotations on weaving counts being named at the middle of the year.

One factor entering into the men's wear goods and yarn situation which has made itself more effective during the last year, has been the rapid and extensive expansion in chain store method of selling men's clothing. A parent company will operate a large number of retail clothing establishments in a number of different cities selling suits at a low price. Purchasing by such chain stores is done by one head and the quantities bought by these factors during the year have been surprisingly large. Many manufacturers have made a specialty of doing business with chain stores and those that succeed have been among the steadiest and largest consumers of men's wear yarns. Yarn spinner and manufacturer must work well together to permit the quoting of lowest possible prices to obtain this business and where this has been done active trading has resulted.

The chain store influence has also been toward a more severe hand-to-mouth manner of buying, this group operating on as narrow stock margins as possible and manufacturers catering to this trade have been compelled to buy yarns in like manner. The chain store is having a tendency to spread yarn purchases out over the entire year and away from the old two-season idea, chain stores not waiting for the opening of light-weight or heavy-weight lines at any particular time of the year, but purchasing new lines as needed and when manufacturers show them just what they want.



Dress Goods Yarns Improve

While men's wear yarn volume has been fair during the year and at least equal to that of 1926, the dress goods situation from a worsted spinners' standpoint has witnessed an improvement in volume over that year. Although there has not been a large amount nor an active and steady demand for worsted yarns for dress goods during the year, volume for the year represents a substantial improvement over the previous twelve-month period and is due in large measure to the greater popularity of light-weight, sheer dress fabrics which have staged a come-back of fair proportions with prospects of further expansion this year. Production of very light-weight worsted dress fabrics has come as a result of the large volume of business lost by these manufacturers to silk and other extremely light fabrics which have been in largest demand during recent years.

Finer counts of yarns, bulk of which are spun on French system, are used in these lines and this point has been of advantage from spinners' viewpoint as it reduces the volume of yarns spun. Spinners working on fine numbers, 60s and finer, can only produce a limited quantity and at the same time it is possible for them to make a profit on such counts which would not have occurred had they confined their activities to ordinary counts which were severely competitive. Further expansion in demand for these light-weight worsted dress fabrics will result in further readjustment of yarns, increasing consumption and curtailing poundage production. This improvement in dress goods, which has become noticeable this year, is the result of long and intensive study by these manufacturers who for a time were pessimistic, believing that their position was permanently undermined by the inroads of silk and other fabrics.

Many Spinners Curtail

Notwithstanding the increase in men's wear, outerwear and an improvement in volume of worsted dress goods business placed during the year, it was not a favorable twelve months for the average worsted spinner. While there have been many spinning concerns liquidated during this time and production reduced to an important degree, there still has been apparent a condition where approximately two-thirds of the spindles in the country have been satisfying demand, spinners operating at an average of approximately 65% to 70% during the year. Under such circumstances it is imperative that the trade, including a sufficient number of spinners, a fair proportion of the spindles of the country, take cognizance of what their competitors are doing if their position is to be improved. All spindles of the country, at present, cannot be placed in full-time operation with the anticipation of disposing of their product at a fair profit.

It becomes necessary for this section of the industry to take steps to meet such conditions and the consensus of opinion of leaders in spinning trade, learned from the experience of other industries, is that such a situation can only be adequately met by cooperation along legitimate lines similar to those already followed by other trades. Spinners, under such a program, would stop selling yarns based on full time operating costs when they operated at only two-thirds full-time, as this year; each spinner, under such a program, would know exactly what it costs at all times to spin certain counts of yarn, important progress in this first and essential step being apparent during last year when the National Association of Worsted & Woolen Spinners supervised a cost survey among more than 20 different spinners, the leaders in this movement.

Accurate Data Essential

Such a program would involve an accurate study of stocks of yarns throughout the country in spinners' hands and other statistical data necessary, not now available to spinners which will permit them to run the spinning business as a whole, not only their own particular mill, on a scientific basis and not along the "hit and miss" policy that has been so costly to worsted spinners during the last five years. The year 1927 has been one of education of spinners along these lines and their viewpoint is noticeably changing from that of the individual spinner to one that looks at the situation from a broader angle. One that sees no individual spinner can long have prosperous conditions unless the entire spinning trade is first placed on a more modern and scientific basis to meet conditions now to be faced, rather than being geared to business methods that were current 25 years ago. Looking at the spinning trade from this angle considerable progress may be reported.

From a consumption standpoint the future may be studied with optimism. There are indications consumption of worsted yarns has already touched the low point, during the last two years, and the future will witness a turn in the opposite direction. There are examples of this trend noticeable in the dress goods and outerwear sections of the market. The year 1927 represented one of the largest years for spinners of outerwear yarns and there is nothing in sight to lead one to predict further expansion in demand will not occur during 1928. Spinners are benefiting from the efficient merchandising methods of manufacturers of knitted outerwear and the cooperative marketing supervised by their national organization and also from their national advertising campaign. There are also indications manufacturers of worsted dress goods will continue to improve their position this year, the start having been made during 1927, and it is probable that a larger volume of worsted dress goods of the new types will be sold than for several years past.

Worsted men's wear yarn volume

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has been satisfactory for the year, and when the large number of dress goods looms turning over to production of men's wear is taken into consideration, the men's wear group has in reality been in receipt, during the last two years, of a large volume of business. Several spinners of French spun mixtures for men's wear state they have sold the largest volume of yarns in their history during the year. There are no signs on the men's wear horizon to indicate any reduction in this section of the market and while these spinners are compelled to figure on a lower price basis so far as their margins are concerned, the outlook for 1928 in men's wear yarns is good. While the outlook as an entirety is more promising for worsted yarns, no one in the trade anticipates a boom year. Progress in overcoming spinners' problems has been under way for several months and more rapid progress is anticipated this year. Outlook is for a volume at least equal to 1927 and probably larger, with cooperative measures trending to insure spinners a larger spinning margin than during 1926 or 1927.

Sluggish Top Year Closes Firm

U. S. Tops Lag Behind Wool and Noils—Much Business Taken at Cost

THE wool top market opened the year 1927 at a good rally from the low values of 1926 which had been a particularly difficult year for commission wool combers and independent topmakers. High hopes were entertained for 1927 but were not fulfilled. The only difference between 1926 and 1927 lay in the fact that on the average prices were firmer and some tops reached higher values, but manufacturing operations throughout the year were of a perplexing character. The keen competition for business led to continuous price cutting under cover and it was not until the year 1927 neared its close that the market became stabilized on a firmer level owing to exhaustion of cheap wools and a firm to advancing market for spot raw materials.

Prices in 1927

The course of the U. S. top market during the year was irregular in the matter of price, the 50s domestic top breaking away from the market and ending the year at its high price while the fine top closed 2c per lb. below its opening of approximately $1.40. The rise from the average low price of the year for fine tops was 4½c while the 50s gained 9c and during the first week of 1928 was apparently headed for a much higher level. The following table gives the general situation during the past twelve months for wools, tops and noils:

	January 1927	January 1928
Fine wool	$1.12	$1.15
Fine tops	1.40	1.38
Fine noils	.80	.83
¼ blood wool	.80	.87
¼ blood tops	.97	1.02
¼ blood noils	.52	.58

Stocks of tops and noils in the United States at the beginning of 1928 were approximately normal in relation to the reduced supplies of raw materials held by manufacturing and holding interests. Stocks of wool tops run on the average about 18,000,000 lbs. at the beginning of a year and as of Sept. 30, 1927, latest figures available, total stocks of tops were 16,258,000 lbs. The noil stock situation is very similar. Average noil stocks at the beginning of the year for the last five years average approximately 10,000,000 lbs., which may be compared with Sept. 30 estimate of 6,989,000 lbs.

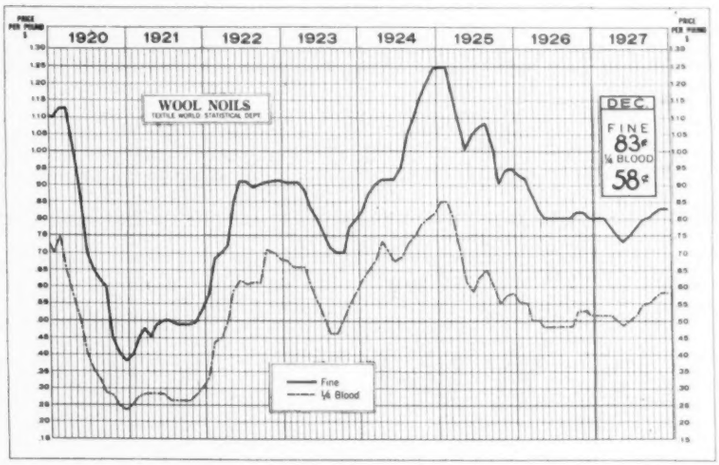
Consumption of noils in the woolen industry and its kindred branches was quite good all through the year. Imports ran somewhere near 4,000,000 lbs. in excess of the previous year and as 1927 drew to a close no surplus of good material could be found in either the Boston or Philadelphia markets. So far as 1928 demand is concerned much will depend upon the reaction of the New York goods market at the heavyweight opening. If worsteds meet with favor then the production of noils will increase; if on the other hand woolen fabrics continue to maintain their lead in production then noil demand will continue in excess of domestic output and further large imports of noils are not unlikely.

Noils Open 1928 at 6% Gain

The noil market opened 1928 quietly. Noils on the average advanced 6% for the year and the wool market about 5%. The real feature of 1927 was the large and steady mill consumption of these commodities and the fact that they were able to close the year at an advance shows very conclusively that the large imports had little or nothing to do in affecting prices. The following table compares noil prices at this time with those of a year ago:

	1927 Cents	1928 Cents	Change Cents
Fine noils	78	83	Up 5
½ blood	72	76	" 4
58s	65	68	" 3
56s	60	62	" 2
52s	57	58	" 1
50s	53	58	" 5
46s	50	53	" 3
44s	48	50	" 2
40s	45	50	" 5
Medium wool clean	.95	1.00	" 5

Noil production in the Bradford English district opened the year 1928 below normal and this helps to maintain values. New business is limited. Dealers state that it is difficult to buy noils and sell them at a profit. America is picking up small quantities wherever prices can be arranged but the volume taken recently has been very small. Demand from English mills and also from the Continent is of a hand-to-mouth character. The noil market had a good rise during the year with the high prices for the year maintained during the closing month. Average fine noils, all grades, show an advance for the year of 17%; crossbreds noils all grades are up on average 15%; prepared noils 50s-32s are up 10%; carbonized noils all grades are up 7%.



Top and Noil Imports

Imports of noils into the United States during 1927 showed a large increase. Average preceding five year annual import was 7,127,000 lbs., while for 1927 the estimate was 8,975,000 lbs., a gain of 1,848,000 lbs. Total U. S. arrivals for the last six years are shown herewith:

	Pounds
1922	3,980,000
1923	8,574,000
1924	10,884,000
1925	7,469,000
1926	4,728,000
1927 est.	8,975,000

Top imports are negligible, approximately 200,000 lbs. of wool, hair or mohair as compared with 100,000 lbs. in 1926. A demand well below productive capacity of domestic combers and the high duty of 33% plus 20c a lb. ad valorem were effective barriers. To land duty paid, a Bradford fine top would cost $1.75 as against say $1.40 for similar domestic top.

Rise in Bradford Tops

The course of the Bradford top market during the year was in sharp contrast to that seen in Boston where the net gain was less than 2% while the Bradford market registered an average advance of 15%. In the late fall Bradford tops showed an advance of 20% but prices receded as the year came to an end. The table herewith shows Bradford prices at the beginning of the years given:

	January 1927	January 1928
Fine tops	51d	57d
64s	46	54
58s	39	45
50s	26	30

Favorable Outlook for Noils

The noil outlook is considered very favorable. Much larger business has been placed with wool combers since the first of the year and a little later on a larger supply of noils will be available. There is no reason to suppose, however, that the output of the commodities will run ahead of the consumption. This rarely if ever occurs in the United States.

Much will depend upon the situation in the foreign markets during the next few months. Owing to high wool, noil values both on the Continent and in Great Britain are on a high level, too high as a matter of fact to allow of any American purchasing in bulk. The output from our domestic mills is at this period of the year rather uncertain. The forecast at this moment is for a larger consumption than production. This view of the situation may probably be confirmed when the goods market places orders on fabrics for 1928 fall and winter.

Everybody Looks for Prosperous Year

By Chas. J. Webb

Chas. J. Webb & Sons Co., Inc., Philadelphia.

World markets are high and advancing. American wool market is very strong and trade is buying on sheep's back. Future would indicate that everybody looks for a higher and prosperous year.

My humble opinion is that the ultimate success for 1928 depends as usual upon the maintenance of consumptive demand for woolen goods. Up to date they have not responded to the impetus of the raw material markets. We are all hopeful that the year 1928 will be a good one.

Expects Normal Business for First Half Year

By Herbert S. Thatcher

Treasurer, Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

Due to low prices at which New York cotton is selling, with staple cotton in proportion, we are able to sell mercerized yarns at a price which should stimulate business. We expect a normal business for the first six months of this year at prices ranging not far from today's level.

CHAS. J. WEBB SONS CO.
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BRADFORD, ENGLAND

Domestic Wools Forge to the Front in 1927 and Are Likely to Figure Conspicuously in 1928

Moderate Price Advance in 1927 Following Two Year Decline May Go Further in 1928

THE year 1927 in wool was featured chiefly by increased importance accorded domestic wool and a gradual rise in values accentuated during the closing weeks of 1927, running into January 1928 with undiminished vigor. The long decline in wool values in force through 1925–26 had about spent itself by the opening of 1927 and the opinion then dominant that a stable course of values was in sight was later justified by the action of the domestic wool market throughout 1927.

General operations in 1927 may be summarized by stating that domestic wool made a gain for the year of approximately 5%, tops, 2%; yarns, unchanged. Foreign wools in bond, well above domestic wools of similar grades, remained stationary in price for the greater part of 1927 rising moderately near the close of the year and entering 1928 quite strong owing to the high price levels prevailing in all the primary markets. Other features of the year cover the largest consumption since 1923; a marked slump in foreign combing wool imports; wool prices advancing against a declining general commodity trend; consumption of domestic wool running ahead of production; tops and yarns caught between advancing wools and relatively low fabric prices; U. S. Court decision placing Argentine 6s in carpet wool class.

As to 1928 the outlook is for sustained manufacturing interest in wools of domestic growth; restricted imports of medium to fine foreign wools; an unusually favorable situation for the domestic wool merchant; high prices for the growers and a consumption of wool that may be at least as large as in 1927.

After all the talk about advancing wool values, high-priced raw material checking manufacturing operations and so on ad nauseam the wool market in the United States closed the year 1927 with the average wool price registering a modest gain of approximately 5%. It might have been supposed that wools had been advanced 20% and there certainly would have been some justification on the ground that competing foreign wools could not be brought in to advantage even if such a rise had been accomplished. It must be said that the wool trade operated throughout the year in a very conservative manner and with the interests of the manufacturer always in mind.

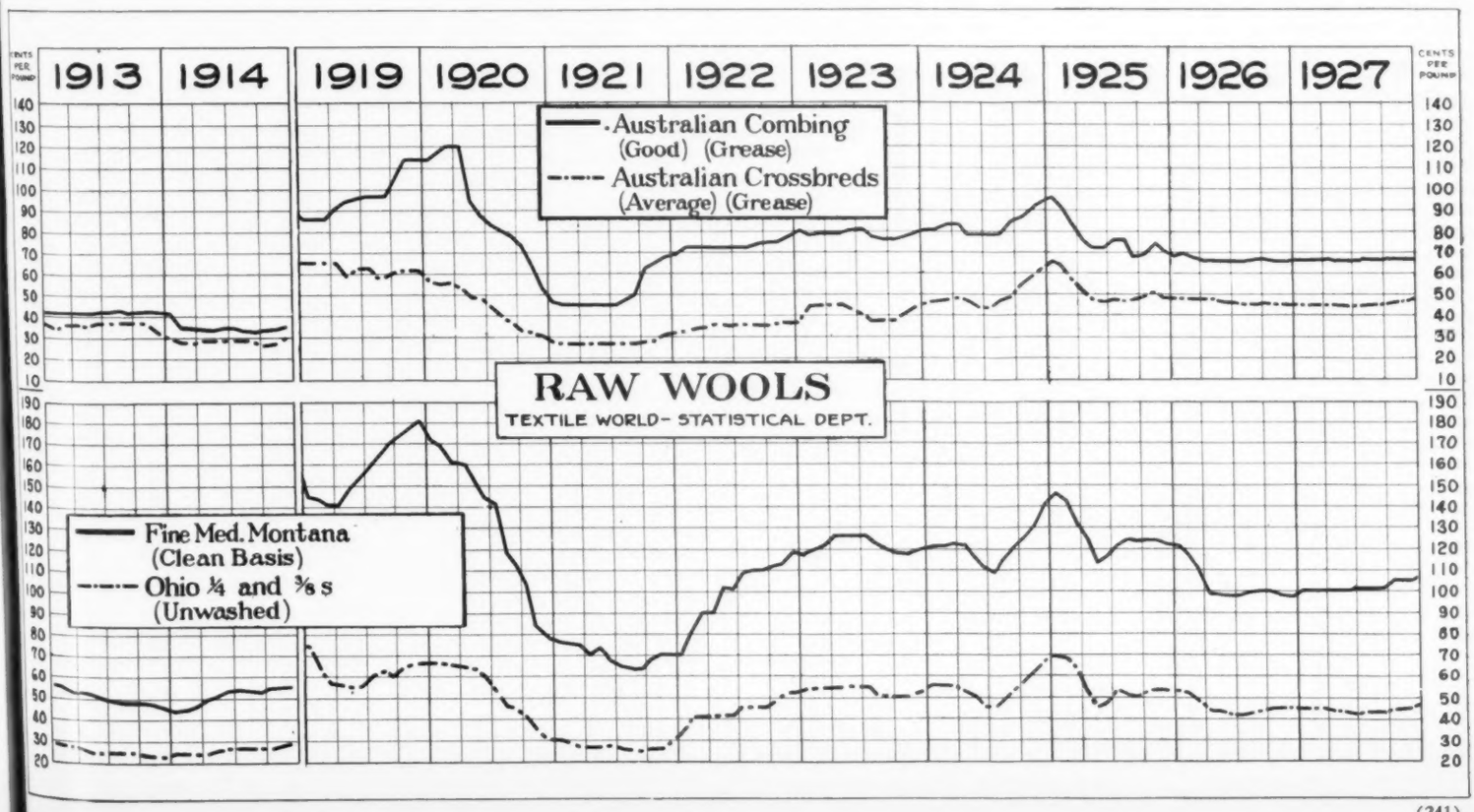
Judging from the amount of wool utilized during 1927 manufacturing was on the whole much larger than many people thought, but unfortunately the profit realized was in all probability well below normal. The demand was there, but for reasons rather difficult to analyze whole divisions of the industry had a profitless year. Wool consumption was larger than in any year since 1923. Estimated consumption for 1927, in grease pounds, was 554,500,000 pounds; for 1926, 510,033,000 pounds; for 1925, 526,285,000 pounds; for 1924, 537,760,000 pounds.

Contracting Opens Early

Contracting opened the 1928 season unusually early, not far from 45 million pounds being placed under contract by mid-January at prices which showed a greater advance than the actual wool market had made throughout the year 1927. The late William M. Wood's advice to Summer Street to avoid contracting wool on the sheep's back was thrown into the discard. The wool trade was long on money and short on wool and contracted at prices that convinced wool growing interests that prosperity had put on a new suit of clothes. Buying wools that could not be shorn until May was some gamble but justified on the ground that long before that time domestic spot wools would be near complete exhaustion.

A leading wool merchant discussing the contract situation stated that the high prices paid in Montana, 40c or better were tending to bring new clip values perilously near the importing point of similar Australian wool. A Montana fine and fine medium clip costing 40c in that state would cost 44c when all charges were included on arrival in Boston. This clip might shrink from 63 to 65% which would give a clean price basis of $1.19–$1.26. A similar merino might possibly be landed in Boston around $1.35 duty paid and when 8% is deducted from this price on account of superior packing, the domestic and foreign wool would be approximately at the same price. Texas contracts at 42c were considered better purchases than Montana clips at 40c.

The wool trade opened the year 1928 in a very strong position. The amount of foreign wool in the United States was so negligible that even under most ordinary circumstances the spot domestic wools available were likely to be well on the way to exhaustion before the new clip began to arrive in bulk. The mills were better supplied with wool than might have been imagined from the depleted stocks in the Boston district. Wool manufacturing as a whole, and at any



period of the year, usually has about four months' supply in reserve

Consumption Ahead of Production

During the last five years the consumption of domestic wool in the United States has been running ahead of production. The following table gives the approximate situation in grease pounds:

Total spot stocks, Dec. 31, 1922	174,500,000
Production, 1923–27	1,484,500,000
Total available wool	1,659,000,000
Consumption, 1923–27	1,562,400,000
Estimated spot stocks, Jan. 1, 1928	96,600,000

The Boston Wool Trade inventory showing total stocks of unsold wool, tops and noils both foreign and domestic as of Jan. 5, 1928, were 25,698,000 lbs. smaller than the 1927 inventory. The showing is as follows:

	1927 Lbs.	1928 Lbs.
Domestic wools	54,642,000	45,628,000
Foreign wool in bond	23,755,000	8,144,000
Foreign wool out of bond	3,022,000	1,949,000
Total	81,419,000	55,721,000

There was no change in the wool situation either at home or abroad. The tendency was firmly against the buyer, whether on Summer Street, in the primary markets or in the western wool fields. Wools the world over moved contrary to general commodity prices in 1927, conspicuously so in the English market. Whether this can long continue in face of declining commodity trend in the United States and elsewhere is a question. The continuance of this situation in the United States for the next few months is not unlikely.

Total stocks of domestic wool grease basis in the United States as of Jan. 1 were probably not in excess of 100,000,000 lbs. and stocks of foreign wools for clothing purposes were approaching the vanishing point. Bond stocks of wool, clothing and combing in Boston, December 31, amounted to only 3,770,000 lbs. and this amount represents approximately 70% of total U. S. bonded wool stocks.

Comparative Statistics

The consumption of domestic wool has been rising steadily during the past five years and it may also be said that the United States production of wool has shown a steady increase. The following table gives domestic wool consumption and domestic wool production during the last five years:

	Reported Consumption	Production
1927 (est.)	312,700,000	323,500,000
1926	248,525,000	311,500,000
1925	265,326,000	301,100,000
1924	281,964,000	282,300,000
1923	249,900,000	266,100,000

Reports of wool consumption cover approximately 85% only of the industry. The American Woolen for example reports its machine statistics but gives no information regarding either wool stocks or consumption. Wool consumption figures as reported must therefore be increased 15% to give approximate amount of wool utilized annually in the United States. Assuming that the percentage of domestic wool utilized by non-reporting mills would be similar to that reported and adding 15% to reported totals the following table gives approximate consumption and production of domestic wools for years named:

	Actual Consumption	Production
1927 (est.)	359,600,000	323,500,000
1926	285,800,000	311,500,000
1925	305,300,000	301,100,000
1924	324,300,000	282,300,000
1923	287,400,000	266,100,000
Totals	1,562,400,000	1,484,500,000

There was at the beginning of the year 1928 a higher degree of stability apparent in all branches of wool manufacture as compared with previous year. The advance in wool values during the last quarter of 1927 was far from extreme and the entire basis for domestic wools Jan. 1, 1928, was barely 5% higher than a year ago. The statistical position was much more favorable to the domestic wool merchants and growers conversely much less favorable to importers than a year ago.

Single Mill Consumption Increases

The tendency toward more efficient organization in wool manufacturing seems to be materializing in actual figures. The tendency is toward a fewer number of mills utilizing larger quantities of raw material. Thus in August 1926, 588 mills reported a consumption of 40,859,000 lbs. grease pounds, while in August, 1927, a smaller number of mills, 573 in all, reported a larger consumption of 46,504,000 grease pounds. This gives an average single mill consumption in August, 1926, of 69,490 lbs., while in August, 1927, the average single mill consumption had risen to 81,150 lbs. In October, 1927, 568 mills consumed a monthly average of 86,480 grease pounds. The showing, suggestive enough but approximate only, is as follows:

Date	Mills	Consumption
August, 1923	595	69,790
August, 1926	588	69,490
August, 1927	573	81,150
October, 1927	568	86,480

Wool and Commodity Prices

During the year 1927 the rising wool trend ran contrary to the general course of commodity prices both in the United States and Great Britain. The rise in raw materials was to a much larger extent in Great Britain not only in wools but also in tops and noils. While the general commodity level in the United States declined one point and that in Great Brtain two points, domestic wool in America rose 9 points and the English wool market 18 points taking July, 1914, as the base. The following table compares the price in wools and general commodities in the two countries:

	Wools in U. S.	Wools in England	British Commodity Index
July, 1914	100	100	100
Jan., 1927	168	130	140
Jan., 1928	179	148	142

In the United States Irving Fisher's commodity index is the generally accepted yardstick, but as this is based upon average 1913 prices the situation in this country can be shown little more in detail in the following table:

	Territory ½ blood Clean	Ohio ¼ blood	General Commodities
Average 1913	100	100	100
Jan., 1927	186	180	146
Jan., 1928	198	192	145
Change	up 12	up 12	off 1

Slump in Combing Wool Imports

Not since the current tariff came into force was there so little foreign wool available as in Boston at the close of 1927. Approximate stocks of wool in bond Boston Jan. 1, 1928, amounted to 8,161,000 lbs. of which amount 4,371,000 lbs. were carpet wool. Custom house officials state that as a result of an investigation covering three years, bonded stocks in Boston run approximately 70% of total bonded wools in the United States.

The severe slump in wool imports during 1927 was, it may be noted, entirely in wools for clothing purposes and in Boston particularly. Approximate imports at the three principal ports of entry for 1927 were as follows in million pounds:

	Boston	Phila.	New York
1927	120	83	60
1926	163	56	67

Boston imports for the year fell behind 43,000,000, New York, 7,000,000, while Philadelphia gained 27,000,000.

The decline in raw material imports into the United States in 1927 was exclusively in combing wools. Raw materials for the woolen and carpet manufactures all made gains. The following table gives the situation in pounds for the period Jan.-Oct, 1926 and 1927:

(000 omitted)

	1926	1927
Combing wool, clean basis	91,225	57,110
Clothing wool, clean basis	6,962	7,709
Wool noils	3,647	8,067
Rags and clips	15,687	15,755
Wools wastes	3,071	3,584
Silk noils and wastes	8,323	10,385
Carpet wools, all conditions	82,930	117,997

The wool market at mid-January 1927 was fully in control of the seller, a situation entirely reversed from that of January 1926. There was every indication that the consumption trend in American mills would continue on wools of domestic growth and that the carryover of these wools at the end of the year would likely be the smallest for a considerable period. The wool market with a minimum of engineering had worked itself into a very strong position and while holders had apparently the power to advance prices on worsted wools all along the line, they exercised a very wise repression, being unwilling to do anything that would in any way interfere with the goods market developing a good stable business.

A noted English authority stated at that time that wool was everywhere the dominant factor in the industry, despite the fact that Australian supplies had increased 50% from the low points of 1920–1921 production. The maintenance of consumption was remarkable although from the English standpoint the channels had been somewhat altered and the stream partially diverted into new courses. Many countries once good purchasers were now manufacturing for themselves. This new and enlarged demand meant increased competition and strengthening of values in the raw material. Referring to the United States he noted that although general business was splendid with money plentiful and cheap, the textile industry was in the grip of adverse conditions, many manufacturing concerns being unable to earn dividends.

Situation in Fall of 1927

The situation in wool in the early Fall was difficult to interpret. Men with the widest and longest experience in wools had rarely if ever witnessed such a peculiar set of conditions as those governing wool manufacture. That there would be very early contracting for wool was a foregone conclusion. Wool growers well informed as to the situation at home and abroad, were likely to demand high prices. In the wool lofts of the various houses much activity was seen in the grading and sorting of wools as a considerable quantity of raw material had yet to be delivered on business placed weeks previously. Prices seemed to have reached a peak. Manufacturers were not prepared to follow any further advance and something of a deadlock developed. The market had reached a point where prices were too high to interest mills.

The prices asked for wools at the time were unfavorable to the independent topmakers and yarn spinners. The situation was quite paradoxical, stiff to advancing prices on raw material on the one hand and on the other hand a slow uncertain movement in the goods market. Wool holders were inclined to emphasize smallness of available supplies and on the other hand overlook the slim demand. The strong wool market stood in very sharp contrast to the situation in tops, yarns and fabrics where there was severe competition. It seemed on the face of it as though manufacturers, and this covered topmakers and yarn spinners, were positively unable to meet any further advances in wool.

Opening of Foreign Season

The foreign wool season opened strongly in line with general expectations. The Continent was short of supplies and this was true also of the United States as regards colonial and South American wools. The opening of the Australian season at Sydney, Monday, August 29, brought about a strong Continental demand for the wools offered which were mostly of the topmaking or Continental style. The general level of prices was from par to 5% above the closing of the old season for similar wools. Germany was the chief buyer and Russia and Japan were quite lively purchasers. Bradford took a little but America bought nothing.

The South African season opened with small offerings for which there was a good demand at prices on par with the close of last season. Super 12 months were $1.00, average 12

months 95c; 10–12 months, 92c; 8–10 months, 87c. Wools landed in Boston at these prices would be approximately 8c a pound higher than the limited stocks of similar wools in bond.

The general outlook for the new world wool season suggested rather smaller supplies than a year ago. The Australian clip would probably run 300,000 bales short, with New Zealand slightly smaller and South Africa and South America possibly slightly below last year's clips.

The raw material trend continued upward and yet mills did not show any particular anxiety to buy ahead on advances although they probably realized that the market without the least manipulation was headed to higher levels. The situation justified higher prices from the wool seller's standpoint. It was a plain case of supply and demand, with stocks relatively small and demand relatively good. Wool sellers had a promising field in which to operate unencumbered by sizable amounts of competitive foreign wool. All the foreign markets were high with the general world supply smaller than previous seasons and further, domestic mills had taken already in one way or another at least 65% of the domestic clip and the price trend for the balance was upward. Manufacturers were in the woods. A few here and there had found their way out and were doing business on a fair to slim margin. The majority of the mills were less favorably situated. In the intermediate industry covering wool combing and yarn spinning most of the improvement was imaginary rather than real. There was a keen struggle for business and margins between conversion costs and sale prices were not widening.

Wool Tariff Cases in 1927

Several decisions were handed down during the year all of importance to the wool trade. Prominent among them was the Supreme Court decision relating to the interpretation of a provision of the Emergency Tariff of 1921 in the "combing-clothing wool case." The decision turned on the proper interpretation to be placed on the provision in the Emergency Tariff placing a duty on "wool commonly known as clothing wool." Importers argued that this expression excluded combing wool and asked that the duties paid on combing wool during the life of the Emergency Tariff be remitted. They won their case in the lower court but the Supreme Court reversed the decision of the Court of Customs Appeal and decided in favor of the Government.

Another case of importance was that relating to the tariff status of the wool known as Argentine 6s. The U. S. Court of Customs Appeals handed down a decision April 16, 1927, affirming the action of the lower court which by a majority decided against the Government contention that Argentine 6s was a wool improved by admixture of English blood and so dutiable under paragraph 1102 of existing tariff at 31c per pound clean content. The government attorney, May 14, filed a brief with the court rendering the decision asking for a rehearing, counsel for the importers also filed a brief opposing a rehearing. After full consideration of the briefs the Court of Customs Appeals refused the government a rehearing. This decision has apparently opened the door for the consideration of the actual status of Argentine 4s and 5s, protests have already been made against the payment of clothing duties on these wools.

Later in the year the tariff status of Welsh mountain wool came under discussion, whether it should come in under paragraph 1101 or under paragraph 1102 as a clothing wool. A hearing was held before Judge Young in the United States Custom Court, Boston, Dec. 2 and then carried over to Philadelphia and New York. The case was still under consideration at the beginning of 1928. This native wool had hitherto been allowed to enter the ports of Philadelphia and Boston under the carpet wool class, but the New York appraiser raised the question as to its real status under current tariff. Waterhouse & Lockett, counsel for Ackroyd Bros. Ltd., who were contesting payment of clothing duties on a 10 bale shipment brought several witnesses before the Boston court who testified in general to the Welsh wool being an unimproved wool and similar in general characteristics to Donskoi, Cordova, Blackface and similar standard carpet wools.

Substitutes Meet Fair Demand

Light-Colored Materials in Call and Make Moderate Price Advance

THE general substitute market in 1927 encountered a steady, stable business on a firm to advancing price level during the greater part of the year. The general price decline running throughout 1926 was arrested early in 1927 and after a slight recession in values in the early summer the market for woolen raw materials stiffened up coming to the close of 1927 in good shape and on a higher average level than the year opened. While reclaimed materials were steady during the year old woolen rags moved over a wide range of prices and ended the year on a slightly lower basis. The same was true of the English market though price fluctuations during the year were less extreme. The Bradford rise in white mill wastes was very marked, fine drawing lap closing the year 20% higher against similar materials in Boston showing an advance of 4%. The outlook for 1928 favors a continuance of business around current basis of 70-75% of full demand. Prices in general are likely to remain firm particularly if the wool market is able to maintain itself.

During 1927 the mill demand for rags and their processed products was strong on the side of white and light colors and as domestic rag supply was inadequate recourse was made to extensive imports. There was noticeable, however, a drift toward large consumption of the cheaper darker-colored rags. The public demand was for lower-priced good cloth, the $22.50 suit having apparently established itself rather firmly. There will be, therefore, good reason in 1928 for woolen manufacturers to stress the production and sale of the darker fabrics which utilize larger quantities of cheap domestic rags.

Cheap Rags Exported

The market for old woolen rags during the year was not helped to any noticeable degree by the very strong wool market and generally advancing values during the last quarter. This lack of reaction is difficult to explain and certainly cannot be laid to any excessive imports inasmuch as there was an approximate import decline of 1,400,000 pounds of rags and clips as compared with the year 1926. It might be noted in this connection that imports of white wool flocks showed a good gain in 1927, but as no separate schedule is maintained for this material statistics cannot be given. The following table gives imports and exports of woolen rags and clips for the years named:

	Imports	Exports
1921	2,756,000	1,863,000
1923	11,397,000	10,988,000
1925	23,382,000	2,380,000
1926	20,200,000	9,680,000
1927 est.	18,800,000	14,100,000

The imports during the year were mainly in high priced materials averaging approximately 30c per pound while the exports were dark colored rags, for which there was a very limited domestic call, at an approximate export value of 8c.

The general situation at the opening of the year 1928 seems favorable to this industry and its secondary markets. It has, nevertheless, to be admitted that the old woolen rag market came to the end of the year 1927 with prices on a generally lower level than at the beginning of the year, the chief exception being white knit. On the other hand the market for mill wastes rose gradually during the year in sympathy with wool and at the close of 1927 was on a level approximately 5% higher than the previous year. The following table compares prices for some standard rags with those prevailing a year ago:

	January 1927	January 1928
Fine light merino	16–16½c	13½–14c
Fine dark merino	5–5½c	4½–5c
Coarse light merino	7½–8c	7–7½c
Blue serge	7–7½c	6½–7c
Black serge	6–6½c	6–6½c
White knit	40–41c	43–44c
Light hoods	26–27c	19–20c
Medium clean wool	95c	$1.00

For wool wastes there was a good stable market throughout the year on all white materials. At the close of the year 1927 there was a little more interest shown in some of the colored sorts which had been greatly neglected. Prices on most of the white materials moved in unison with wool and closed the year 1927 with an average gain of 3c per pound. Card wastes and 2 ply colored threads were slightly lower but drawing lap and fine threads, as well as ¼ blood threads, registered an advance of 5c per pound which was about the average advance made by the wool market. The following table compares prices on several standard wastes with those of a year ago:

	Jan. 1927	Jan. 1928	Change
Fine lap	$1.10	$1.15	up 5c
Colored lap	.87	.90	up 3c
Fine threads	.78	.83	up 5c
¼ blood threads	.55	.60	up 5c
Colored fine threads	.36	.35	off 1c
Fine card	.50	.48	off 2c
Medium clean wool	.95	1.00	up 5c

During the first three quarters of 1927 reclaimed materials, woolen rags, clips and mill wastes encountered a fairly steady demand with little more than the usual fluctuations brought about by temporary changes in supply and demand. In October most of the raw materials for the woolen branch of manufacturing had a fairly steady business and the average price trend was upward. The consuming branch of the industry judged by its spindle activity was maintaining itself fairly and as the next season would be heavyweight the outlook for increased activity in the production of woolen fabrics entailing a larger consumption of waste raw materials was regarded favorably.

Demand Covers Many Sorts

The chief feature of the reclaimed wool situation was that there were no large runs of material most of the orders placed being small viewed from the standpoint of say 1925. Some reclaimers, however, were running their cards overtime. The reason for this was seen in the restricted orders covering a large number of materials which entailed the constant cleaning of machinery, thus preventing any large production and adding quite considerably to overhead costs. White knits and softs, light hoods and the various high priced foreign rags were the only materials wanted in bulk. A number of fancy colored knits were selling in small lots and sweater wastes were moderately active.

Mixed softs had fallen to a lower basis and graders were purchasing cautiously. Graders following the English method of sorting to specific shades and qualities are getting some business that otherwise would have gone to the foreigner. Domestic methods of grading have been too much of a hit-or-miss character. These methods satisfactory before the war do not now meet the situation when the entire clothing world is more colorful and stylish and likely to remain so. It may be a long time before there is any heavy consumption of dark colors by American manufac-

turers, yet it is on a large and ready market for these materials that the average domestic grader depends for a satisfactory living.

The rag industry was far from satisfactory. Possibly 80 % of the rags graded from mixed softs would not bring a higher average than 11c, while the remaining 20% might average 20 to 25c. As the cost of grading is on the average about 2-3c per pound it seemed clear that the average rag grader was doing very little more than turning over one dollar for another.

Darker Colors Favored

News from several sources indicated that the hitherto insistent and continuous demand for whites and light colored materials was giving way to a growing interest in what might be termed the medium colors. In the mid-west section of the United States the demand from sweater and other outerwear manufacturers had already shown a switch, not to the dark colors but to intermediary bright colors and this accounted for the strong demand for the several colored knits, maroon, bright red, rose and fancy blue shades. The long run on light colored fabrics had a counterbalancing effect on the old rag collections; perhaps not fully noticed or fully accomplished and yet it seemed quite clear on the surface that if men's wear for several years past had been far removed in coloring from the somber shades of prewar days then the result of this vast change in fashion must ultimately be seen in the colors and characteristics of the old rags collected.

The chief item of interest from the English woolen rag market was to the effect that many German woolen manufacturers were changing over to the worsted system and that this change would tend to bring about some accumulation of the various old knit stocks.

Price Level Closes Higher

The American wool waste market came to the end of 1927 in fairly good shape. There was no surplus of good materials and throughout the year there had been steady absorption at fairly satisfactory prices. Imports had been well taken care of and the gradual rise in wools during the last three months had given a firm tone to the market. Mills had benefited as well as dealers, the consuming mills less than the producing mills. Dealers could not get any cheap wastes from mills at the time. They were considered very good property. If wools should go higher and this was considered not unlikely wastes would enhance in value and producing mills would re-use all the material possible in their operations. The tone was good and the 1928 outlook seemed promising.

A moderate business continued to be done in the Bradford market in all kinds of mill wastes. Prices were maintained firmly. The situation was a trifle irregular as the year came to an end, some opinion favoring lower wool values in 1928 which would of course tend to depress waste values. Comparing prices current in the Bradford market at the beginning and at the close of 1927 a good advance was evident. White lap waste covering all grades showed an advance of 20%; colored laps were up 17c; white spinning wastes all grades up 15%; colored spinning wastes, up 8%.

The year came to an end in the Dewsbury rag district with a declining price tendency. The strong wool situation sustained the market in absence of substantial consumer buying. Dealers in general were showing no desire to liquidate, preferring to hold their materials over into the new year. Graders operated with greater confidence than might have been expected with so small an amount being called for by consuming mills. Prices were very generally lower than a year ago. Merinos of all colors were off 5%; serges all colors are unchanged; worsted all colors, off 1%; white flannels, off 5%; Berlins all colors off 3%; white Berlins off 5%.

Renaissance of Home Sewing

(*Continued from page* 150)

further assured by the fact that more than 90% of the women interviewed in connection with a recent survey conducted by the American Home Economics Association, said that they want their daughters to know how to sew and construct garments. It is significant that the judgment of the women of today is in favor of more home sewing rather than less.

This is easy to understand when we stop to think that the alteration and repair of clothing will always be a principal duty of the home maker. And since she therefore must know how to sew and "make clothes over" it will be easy for her to take the next step and make new clothing.

In every community influential men, women, organizations and institutions are ready to assist in promoting home sewing and dressmaking. Educators, teachers of textiles and clothing, boards of education, Parent Teachers' associations and women's clubs can be enlisted in such campaigns. It is safe to say that few if any projects in social service are more worth while today and every person engaged in piece goods merchandising should have the support of his community as a leader in this work.

Women Enjoy Sewing

But all of this would be quite futile were it not for the fact that most women really enjoy sewing, providing they have learned to sew well. To quote the recent government survey,—"A fact which should not be overlooked is that many women admitted they sewed at home because they enjoyed it. One of the best avenues and often the only one which women have for expressing and developing their creative ability is in making their own clothing or that of their family. No doubt, women of the future will continue to exercise this ability because they find it a joy and satisfaction."

It is apparent from all of the foregoing that home sewing is fundamentally sound and that enough women of every community can be interested in it is to insure a profitable business for every aggressively led piece goods department.

Costume Art Program

The Bureau of Costume Art of the National Retail Dry Goods Association has promulgated a plan for the stimulation of home sewing and a resultant piece goods betterment in a thirty-two page manual, the "Costume Art Program", just published. The promotion of piece goods all comes back to the merchandising of a practical service of information and instruction, within the retail department, in all that relates to sewing and piece goods both for pure utility and for adornment.

The selection and making of a dress may involve as many as ten distinct sets of problems, on any one of which a woman may need assistance. With her much higher sense of values in matters of beauty and style, the home sewer of today demands a very high standard of design and workmanship. Because she cannot attain this standard without special help or guidance and because there is no such assistance at hand, she refrains from buying piece goods to the extent she would if she were provided with the information service.

The Bureau of Costume Art's program is designed to assist retailers of piece goods to build profitable permanent service departments around their piece goods and related divisions.

Professor Charles R. Richards, of the General Education Board and well known author of "Art in Industry"; Mr. Frederick W. Howe, of Pratt Institute, and others, prominent in art, education and merchandising, are cooperating with the new Bureau in setting up a special training course for women sent by department stores or for those seeking store positions in charge of piece goods service programs. We expect to announce the details of this course early in February and it is evident that such institutions as Pratt Institute and leading stores which are progressive in piece goods merchandising and promotion will be in full co-operation with the work of the Bureau.

There are indications that the Metropolitan Museum of Art may interest itself in advancing this cultural movement.

Miss F. Beatrice Hunter, professor at Cornell University and now on Sabbatical leave, has joined the Costume Art Bureau as assistant to the director and will bring to her new position a varied experience in the theory and practice of design, textiles and teaching in the household arts.

A special convention meeting, coincident with the annual convention of the National Retail Dry Goods Association, will be held Thursday morning, February 9. The meeting will be addressed by speakers qualified by experience in piece goods retailing to deal with the subject in a practical manner. A general and open discussion on new methods will be a feature of this session.

With such practical and constructive work well under way, it behooves every manufacturer and merchant who would profit by the success of the movement, to come forward with both cooperation in counsel and material support, to the end that the piece goods business may be permanently re-vitalized.

Cotton-Textile Institute

(*Continued from page* 127)

finished cotton products to the ultimate consumers. Mr. Hines recognized the importance of fostering this appreciation early in his term of office and has devoted much of his time to encouraging its development. As recently as last month an evidence of this spirit was furnished at a meeting of the Converters' Association in New York which was largely attended by members and representatives of the Institute, including Mr. Hines, who addressed the association's members and guests. At this meeting converters, cotton manufacturers, and cotton finishers exchanged views on important matters of mutual interest. This is but one of the examples of the new attitude which is being encouraged.

In September of last year, a meeting of representatives of the mills, selling agents, converters, finishers, wholesalers and retailers was held under the auspices of the Institute. As a result of the meeting, two subcommittees were appointed, one of which was authorized to make a study of the problems of hand-to-mouth buying from the standpoint of its effect on the cost of manufacture and distribution, while the other was to canvass the question as to what the manufacturer's policy should be when selling to (1) wholesalers, (2) retailers, mail order houses, chain stores and buying organizations.

In July of last year a similar meeting was held between representatives of the various cooperative cotton growing associations and representatives of the Institute with a view to determining the grades and staples of cotton which would, on the one hand prove most satisfactory to mills in the manufacture of their products, and on the other, would afford the growers an adequate return on their investments and efforts.

While the activities of the Institute to date represent only a beginning, they have been attended by a scrupulous search for sound policies. With the development of these policies and extension of the activities undertaken in its first year the Institute should prove of greater service to its members and the industry.

Year Marked by Intense Competition and Narrow Profit Margins in Broadsilks

Decline in Raw Silk and Large Stocks of Merchandise Were Factors in Creating Competitive Conditions

SILK manufacturers, without a dissenting vote characterize the year 1927 as the most competitive period they have ever experienced. It is doubtful if even 1923, the year of the Japanese earthquake, presented so many and such knotty problems as did the year just closed. The previous year, 1926, was a period when good management in the conduct of a firm's business brought its just reward. The year 1927 on the other hand was a year when even the most competent and farsighted management did little more than enable a concern to break even. Indeed, many capably managed firms came out in the red in spite of everything.

The silk trade in its progress from small beginnings back in the days following the Civil War, has met and survived many and varied situations. The trade really dates its origin from the Civil War for it was then that the first protective tariff on silks was instituted, which has been continued with more or less important changes over the intervening sixty-odd years. European competition was overcome; deflation, Free Silver, inflation, war and earthquake have all been surmounted. Today the cycle stands completed with civil war once again in our midst, but this time it is civil war within the industry. The throat-cutting and slashing are confined to prices but the effects are none the less sanguinary. The demise of upwards of a hundred silk manufacturing firms is testimony to this.

It can safely be said that few silk houses found the manufacture and distribution of silks even moderately profitable in 1927. Just why this should be so makes an interesting study. Demand for goods was large, larger probably than in any previous twelve-month period. The record total of raw silk imports during the year, which can only partly be explained by the increased use for hosiery; the relatively high rate of broadsilk loom operation, and the knowledge that many manufacturers increased materially their loomage during 1925 and 1926, all point unmistakably to the conclusion that greater quantities of silk fabrics were made up and sold during 1927 than any previous year. Why then the large and almost universal losses?

The Probable Answer

The declining trend of the raw silk market was undoubtedly one factor. At the same time other years have had more serious declines measured in dollars and cents without the devastating effects of the year 1927. The pronounced hand-to-mouth buying indulged in by retailers and cutters, which naturally forced upon the manufacturer the necessity of carrying the entire burden of inventory, coming at a time when the market was dropping, probably brings us closer to the solution.

Buyers were able to and did take large yardages all through the year. Purchases and contracts, however, represented the ultimate in bargaining and were generally deferred to the last possible moment. This buying policy was pursued due to the knowledge that manufacturers' stocks were excessive, measured by the ability of the manufacturer to hold them. While the mills did not publish their inventory totals in the daily papers, they might just as well have done so as far as it did them any good to try and keep them secret. A buyer had only to visit a few of his manufacturer friends, or to talk to a few salesmen, to know that he had a lever in his hands that could move a whole lot of goods his way at bargain prices.

Overtime Causes Overproduction

Overproduction of silks was present in 1926 and it was brought about by the growing practice of running looms two and three shifts a day. There is nothing inherently criminal in running a loom 20 hours a day instead of 10 hours. Actually it makes for efficiency by reducing overhead and bringing down costs. If just a few ran three shifts a day, it would result in just that much added gain to them but when many tried it, the balance of the market, operating on competitive and closely merchandised fabrics, had to follow suit in self defense. Once started it was impossible to stop. With most of the trade working two and three shifts, more silks were produced than the market could consume.

This was undoubtedly the case during much of 1926 and it was carried over in intensified form into 1927. Stocks at the beginning of the current year were unquestionably very large and throughout the year they have proved a back-breaking burden. The decline in prices for raw and finished silks made matters still worse, but the real difficulty in the way of profitable operations was the record inventories that all through the year prevented finished silk prices from showing even the most moderate sort of recovery.

Spring Selling Season

During the spring selling season, January through April, quantities of merchandise moved were large but viewed from any other angle the results were pathetic. The raw silk market following a dip in February held pretty well and it is fortunate that such was the case for otherwise matters would have been still worse. Prints did fairly well for in this instance at least big stocks were not made up and prices held while the majority of them were disposed of. In every other respect, the situation was bad. What should have been a big and profitable selling season on flat crepes, georgettes, and other spring goods turned into a frank liquidating movement. The large concerns were decidely anxious to sell because of a belief that prices for raw silk and piece goods would go lower, and the smaller concerns had to sell to meet their maturing obligations.

The situation was saved to some extent by the unexpectedly strong market that developed in raw silk during May. This permitted the disposal of additional quantities of merchandise at close but not at ruinous prices. This strength was due to the tight situation that developed in raw silk which had sold in very large volume all through the crop year from the previous July. In another way, however, this firmness was costly for it encouraged certain large jobber and cutting-up trade buyers to contract for fall satins on a price basis that was higher than that enjoyed by those who held off.

The Fall Season

The fall season on satins progressed satisfactorily with good quantities moving right along. June was a good month on gray goods and July witnessed the start of an active selling season. Late in July continued weakness in raw silk brought an end to this peaceful picture. First one large house sharply cut its prices on satin crepes. This move was followed by corresponding cuts on the part of other large factors which went slightly below the first reductions. The first named went still further and a price battle was on. While this battle of the giants was in progress, the medium sized firm simply had to sit back and wait for the end. The market was demoralized in the midst of the active selling season and any opportunity for profitable business went by the board.

Naturally the chaotic situation that now had to be faced brought in its wake attendant evils. The close prices all during the spring had forced a general lowering of the quality of raw silk being put into the merchandise. While this permitted manufacturers to go on doing business it also increased the quantities of inferior goods coming through, particularly on all weighted merchandise. The most costly results of this policy made their appearance following the fall season due to the break in prices.

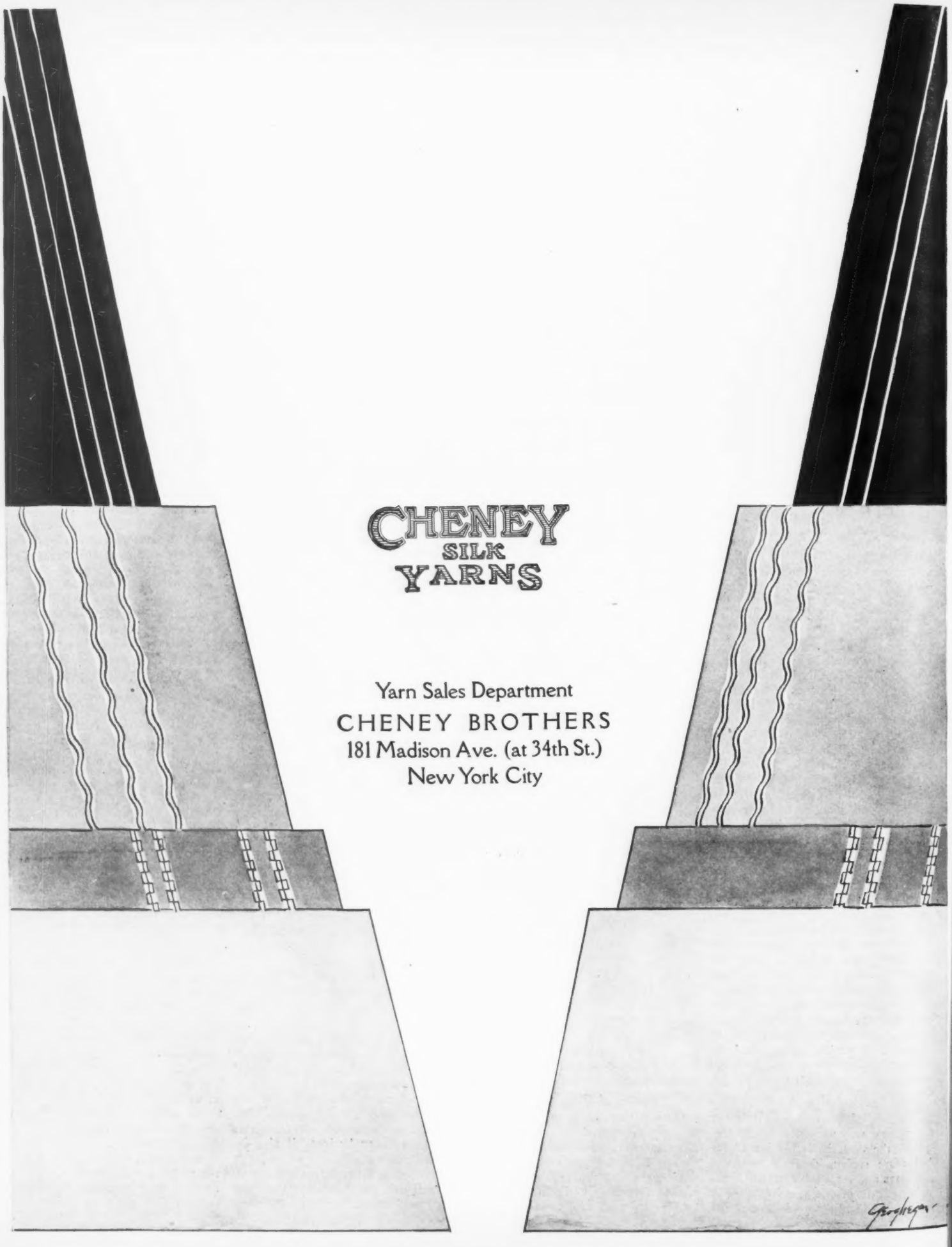
With the market demoralized, every buyer who had contracted to take in goods at the opening prices of the season, was on the look-out for the slightest defect that would permit him to reject the deliveries tendered him. These defects, due to the low grade of raw silk, used, made their appearance in gratifying numbers. Facing rejections and allowances, the manufacturers came back at the thrown silk house, and the throwster.

The latter half of the fall season on satins concerned itself to a disturbing extent with adjusting difficulties that had arisen due to the lower prices and the sub-standard merchandise. Realizing the strength of their position, buyers were extremely critical. Goods were examined with the utmost care and sent back to the seller for minor defects which would be passed without the slightest question in even a fair market. Manufacturers would finally become disgusted in sending out goods time and again and would sell the merchandise "as is" at a reduced price. Cutters in this manner secured a large quantity of fabrics on an "as is" basis that was entirely satisfactory for their purpose.

Velvet Demand Sets In

A strong call for velvets which leaped into sudden and overwhelming popularity for late fall business completed the work that the falling market and the buyers' critical attitude had begun. Business in the staple lines of silks dwindled to small proportions as the dress houses searched anxiously for, first, the transparent velvets—and later when these could not be procured in satisfactory volume, any kind of velvets at all. Manufacturers of velvets had the first really good season that they had enjoyed in several years. Their gain, however, was the broadsilk manufacturers' loss for it curtailed sales decidedly for from four to six weeks.

Holdings of satin crepes in the gray were liquidated to a great extent by the call for prints on this type of material. This demand was maintained for a while but it did not originate any new profitable business. Mills were content to move out such quantities as they had left over from the fall and did not put any new materials in work. Through October and November sales declined to depressed level and many houses curtailed their production drastically. This was the first time that such a step had been undertaken for several years. While this move at least prevented the continued piling up of additional inventories, it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also had the effect of curtailing the demand for raw silk and prices moved to the lowest in over a decade.

Inventories the Stumbling Block

The question of inventories appears to be the stumbling block in the way of profitable operations for the broad-silk trade. Whether it is the presence of the inventories as such or whether it is the fact that silk manufacturers have not yet adjusted their methods and procedure to the carrying of these inventories, is hard to say. There is no question that the stocks of goods are there. While the stocks of piece goods are not published in the same manner that raw silk stocks are, this confirmation is not really needed. The statements of individual men in the industry, the financial statements of representative concerns, the huge quantities of raw silk being consumed, and last but not least the attitude of large houses in the matter of prices, indicate their presence in a manner that admits of no dispute. Nor is it necessary to reply on the rumors that run around the silk district at various times. When one large house moved further uptown to new quarters, the whisper went around that between sixty and one hundred thousand pieces of goods were removed from the vaults to go into stock in the new place.

Manufacturers justify the larger inventories on the grounds that hand-to-mouth buying has thrown the burden of inventory on them and that they have no choice but to carry larger stocks. If this is the case then the presence of such stocks should be a known and understood fact.

Admittedly with the many small and independent mills, the situation is difficult to control. This, however, does not permit all to sit back helplessly. It makes it all the more imperative that such measures be taken as may aid matters. One measure that will work toward a better balance of production and sales is the dissemination of all available data regarding raw silk production and stocks, and also piece goods production and stocks. Few will dispute the good done by the publishing of the raw silk imports, stocks, and deliveries; yet wide-spread opposition had to be overcome. Opposition to the publishing of piece goods stocks is equally short-sighted.

The Outlook

At the present things are admittedly unsatisfactory. Improvement in December and since the first of January gives rise to the belief that the spring business will be very large. Yet with all the tremendous sales, will there be any profit in it? Will there be a profit commensurate with the risks undertaken? It is very doubtful. In nearly every popular construction, the pressure of merchandise has brought prices down to bedrock with the season only begun. Take a georgette number that is selling in a very large way to the dress trade. Jobbers handle this on a margin of profit that is all out of proportion to the service rendered and the risks involved in credit losses, returns, colors, and the chance of a market decline. Yet they cannot get any more and this fact prevents the gray goods market from advancing even though raw silk has moved up 40c a lb. or more in recent weeks.

Only an extraordinary demand for silks can take the market out of its present rut which promises to make the current season a repetition of 1927. Otherwise a big volume of sales will be noted and a profit all out of proportion. It might be pointed out that one other hope remains and that is the introduction of something new in the way of material or style trend. Past years of good business have had the unexpected in the way of some unusually profitable number. In 1925 it was prints and the ensemble. What has 1928 in store?

Declining Prices Proved a Handicap to Spun Silk Producers in 1927

Market Moved off Almost $1.00 a lb.—Price Differential Was Not Great Enough to Encourage an Increase in Use

A CURTAILED use of spun silk in broadcloth and charmeuse, together with a declining trend to prices for all types of yarns, combined to make 1927 just about the most unsatisfactory year for spinners since 1921 when the market was in the throes of readjustment following the break of 1920. While one or two of the large concerns managed to keep their sales nearly on a par with the previous year, it can pretty safely be said that the balance of the market had no such experience and that volume was well below anything that might by any stretch of the imagination be called satisfactory.

The two important seasons for the use of spun silk in particular types of fabrics found markets at this time suffering from a variety of ills. An overproduction of broadcloths during 1926 caused the manufacturers who handled them to prepare for the 1927 season in a very limited way. The larger houses had big stocks which they counted upon disposing of in the first half of 1927. A certain volume of goods was made up in order to sweeten stock and give the buyers at least the ideas that they had something new but actually what was wanted was to rid themselves of an uncomfortable burden which consisted of the carry-over from 1926.

The charmeuse season for the fall was almost equally a dud. In the case of this, however, spinners had at least the satisfaction of selling fair quantities of yarn while preparations were being made. When satin crepes began to break before the season was well under way, it had its effect on the buying of charmeuse which ended abruptly, or at least with considerable dispatch. The season was fair only, for it ended too soon to permit spun silk producers to realize any real benefits.

The steady decline in prices all through the year was equally a reflection of the unsatisfactory demand for products that use spun silk and the action of the raw silk market which dropped to an even greater extent than spun silk. The connection between the two markets is a close one. From past experience it is obvious that if the raw silk market moves either up or down spun silk follows suit. It is a substitute for silk and becomes attractive only at a differential. This latter fact has been a major influence in shaping the trend of prices for a period of many years.

First Half of Year Better

The first half of 1927 was better than the second half in spite of the failure of the broadcloth market to absorb the quantity of two-ply yarns that had been expected. Prices were easy, not to say weak, over this period but the decline was not large, singles holding at the $4.00 level or in the case of some houses slightly above. The major part of the year's decline was encompassed during the second six months. While only a moderate volume of 60-2 yarns were moving, other ply particularly in the heavier worsted counts were being taken in greater volume by the woolen trade.

Single yarns over these months found an unexpected though far from profitable outlet to the manfacturers of the cheaper grades of tub silks. These goods were being used in the cheaper dress lines, some for linings and slips, and in addition in the cheapest types of printed materials. Naturally the competitive character of the market for the finished materials had a strong reflection in the spun market. Only the very lowest grades of 62-1's could be used and these at what were considered very low quotations. It is entirely possible that some of the better grade yarns were liquidated at this time as the lower grade. The chances are, however, that no very great volume moved as such, for spinners control their inventory of fininshed yarn within small limits. This would have to be the case for they are handicapped enough in the length of time it takes and the considerable quantity of material that must be held between the purchase of waste silk and its final conversion into spun silk.

The second half of the year with its more serious drop in finished yarn quotations presented more complicated problems than the first half. The market moved off some 50c a lb. in the case of 62-1's as compared with a 30c drop in the first six months. On top of this must be considered a very quiet market for all classes of yarn. The charmeuse season was killed with only moderate sales of yarn prior to its demise and the balance of the year witnessed almost unrelieved dullness until December. Efforts of the larger producers to find and develop other outlets were not crowned with any degree of success. In tie silks and in certain types of fancies, it was used but not in a volume that would compensate for the loss of sales for the two or three important staples.

Considering the trying twelve months just completed, spinners face 1928 with considerable optimism. There is a well defined belief that this period will be far better than the one now happily past. This optimism, moreover, is based on several very tangible factors. The raw silk market has in all likelihood seen the worst and should maintain the price gains of December and the first part of January. This of itself at once puts spun silk on a firmer foundation and much of the improved buying noted at the year end was in recognition of this fact. Broadcloths are in for a good season and most manufacturers are increasing their schedules to permit them to make up greater quantities.

Producers themselves are in a much improved position to take advantage of any increase in demand that should make its appearance. Most of the material in process is made up of the lowest priced waste silk that has been available in years. Higher priced materials have been liquidated for the most part. Considering the matter in a broad sense the spun silk market has been dropping, with intermittent rallies of longer or shorter duration, for eight years. With single yarns on a $3.50 basis at the present as compared with $5.10 in 1925, $5.50 in 1923, and a peak of $10.75 in 1920, it can readily be seen that the major decline has run its course. On such a basis spun silk becomes that much more attractive in comparison with competing fibers. With the stage all set for a come-back, it only remains for demand for broadcloths and other materials to materialize and from present indications this will be the case.

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Consumption of Raw Silk at New Peak, with Prices Approaching Pre-War Levels

Increases Mostly in Japans with Cantons And Tussahs Showing a Falling-Off

THREE events of major importance took place during the year 1927 in the raw silk market. The first was the new peak registered by this country in the consumption of the fiber. Approximately 550,000 bales were delivered to mills here which compares with 501,500 bales during 1926, the previous high point. Second was the decline in Japan prices to within striking distance of pre-war levels. A considerable volume of 13/15 and 20/22 silk was sold at $4.50 per lb. late in November with other sales in somewhat smaller volume which shaded even this price by 10c to 15c a lb. Third came the practical domination of the entire market by Japan raws to an extent never noted previously.

The last named is by no means the least interesting of the three. Since her early beginnings in the export trade back in the days when Commodore Perry's good will visit, taken by the more prosaic medium of sailing vessel, was still fresh in the memory of the Japanese and when this country was just beginning to feel the beneficent effects of the Civil War protective tariff, Japan's aim has been to dominate the export trade in raw silk. Some years ago she achieved this goal but during the year 1927 she came nearer to the 100% figure than ever before. Well over 90% of the silk consumed in the United States was produced in Japan.

Considerable criticism was heard regarding the lowering of the quality standards and it undoubtedly is a fact that greater proportionate quantities of high grade raws could be used in this country. At the same time it is significant that, price for price and quality for quality, the Chinese and the Europeans found it more difficult than ever to compete last year. Imports of Italian silk dropped to negligible proportions because of the high prices asked. Many manufacturers would prefer for many purposes the carefully reeled high grade Italians but it was a financial impossibility to pay the prices asked, in view of the competitive character of the finished silk market. Shanghai raws, while on a competitive price basis on several occasions during the course of the 12 months, found that many of their heretofore friends and users had made the switch to Japan and were unwilling to switch back. Having established a quality on a certain grade of Japan silk, mills could not switch back without changing the appearance and character of their cloth to some degree and this they would not do.

Shanghai Steam Filatures have for some years lost ground because of this objection. Previously when the selling price of a certain article carried a fair margin of profit, the manufacturers could overlook a moderate price variation because of other advantages. Today every penny counts. This has made it necessary for buyers to operate only at certain times during the year when prices were at attractive levels. If he failed to come in the market at such times because of a poor demand or a belief in lower prices, and prices rallied, then he had to wait months before a favorable opportunity again presented itself. Such a situation did not commend itself to American manufacturers who were more than ever desirous of keeping their raw inventories and purchase contracts at a low point so as to offset the more urgent necessity of carrying large finished silk stocks.

Canton Situation

Only in the case of Canton raws was any appreciable quantity sold. Even here the demand concentrated on one particular size and grade, the New Style 14/16. The 20/22 and the 22/26 grades slipped back into the same helpless, comatose condition that afflicted the Italian and Shanghai silks. The switch away from 20/22 and 22/26 Canton began several years ago when the cotton mills started to use increasing quantities of rayon, and the silk manufacturers found the first named grade entirely too low in quality for use even in the cheapest type of crepes because of the many evenness defects. It is reliably reported at the present time that filatures in the Canton district of China have almost entirely abandoned the reeling of these two sizes. Filatures that formerly reeled them have switched over to the 14/16 size for American use and the 13/15 for use in Europe. The very low prices to which even the best grade Cantons fell late in 1926, resulted in an increasing demand for the 14/16 and 13/15 sizes. The loss of the markets for the coarser grades, however, will still leave total exports for 1927 from Canton below previous years.

Price a Strong Factor

Japan's still more determined grasp on the American market was aided by the stable grading and large quantities presented, but was more strongly than ever consolidated by the sales pressure applied by the steadily lowered price. The market did not break at any time even when the economic affairs of the Japanese nation resulted in a near panic and a moratorium. Over the entire year quotations in Yokohama held within a very moderate range. The high point was 1500 yen in May, a level that was nearly equalled several times in the first half of the year, and the low point was 1270 yen made in the latter part of November and the first week in December. This refers to the basis grade of Saiyu for the higher grade silks sold at premiums over this of as much as 250 yen for the choicest chops.

Varying exchange rates, however, modified the high points as applied to the American market. In May, following the moratorium, the exchange had dropped from a high of 50.00 to 47.00 for 3 m/s so that the highest New York prices were made in January and the lowest in December. Such a statement just about sums up the action of the New York market during the year which, with minor rallies, was a steady, sagging decline. Up until June prices held fairly well and in that month with the promise of active business on fall merchandise, some felt that in the second half of the year the market might give a better account of itself. By the end of June the weak financial position of reelers, the prospects of very large crops of Summer and Autumn cocoons, and the moderate degree to which the fall season in satins materialized in America, caused a recession in prices and pointed the way for the market over the balance of the year.

Japanese Exporters

If the Japanese nation reached out and gained a still more determined hold on the American market, the Japanese exporters went a little way further in their policy of eliminating the foreign exporters. A still greater proportionate volume of the silk shipped from Yokohama and Kobe was exported by the large Japanese houses. The so-called white houses fared poorly and the year witnessed the demise of more than one. Others, while still maintaining a fair volume of exports, have found themselves relegated to a still more subordinate position and their prestige sensibly diminished.

Whether this trend towards extinction is deliberately calculated or whether it is simply resulting from the pressure of trade and economic consideration, is an open question. Whatever the basic reason, the method by which it was attained last year was very apparent. The Japanese houses in this market reached out and clutched any and every bit of business that presented itself by the sure method of quoting a price below what their competitor would sell. To the white house these prices were ruinously low. It is no exaggeration to say that for the greater part of the year, manufacturers could buy cheaper in New York than in Yokohama. For extended intervals New York prices would be 15c to 20c a lb. below what the silk could be bought for in the Far East.

Viewing this situation broadly, the reason for it appears to lie not so much in any desire to freeze out the "house of a different color," as in a better appreciation of the probable trend of the market in future weeks and months. The situation in this country was a difficult and competitive one with mounting piece goods inventories preventing any rise of consequence in finished silk prices. To this was added a critical situation in Japan itself and the combination of the two definitely forecast lower prices for raw silk. The Japanese houses correctly sized this up and relentlessly pursued their tactics of short selling.

Japanese houses during the year handled immense volumes of silk. Certain of the larger ones handled a quantity that would have been equal to the entire export of the nation not so many years ago. Many keen observers doubt strongly whether this has proved profitable. It is the belief that in the search for volume, sight has been lost of the fact that the primary purpose of any organization is to make profits. The fluctuating exchange rate may have favored Japanese houses with good banking connections and it goes almost without question that they have received preferential treatment. As the purchases of yen exchange constitute one of the chief props of the exchange market, it would be only natural that an importer buying 150,000,000 yen or more during the year could exercise quite an influence on the market itself. Working on an advantageous rate, a house could compete very easily with one that had to buy at the day's market.

Even with the exchange advantage, however, and pursuing a well calculated policy of short selling in a declining market, it is still felt that operations of the large importers have been none to successful. Prior to the war, the importing of raw silk was a very profitable operation. Large and continuous profits were rolled up and fortunes were made on a turnover that would be considered insignificant today. Progress has forced the creation of a tremendous volume at a minimum of profit, or, as many believe, at great losses.

The end of 1926 saw the near com-

Rayon comes into its own!

No longer the *Little Orphan Annie* of the Textiles

RAYON today is transformed into woven and knit materials that adorn every household, grace every wardrobe . . . a striking testimony indeed to the development work of such manufacturers as du Pont, who by deep research and incessant experiment have created in Du Pont Super Extra Fine-Filament Rayon a yarn adaptable to the most exacting textile use. Strong, yet unusually soft. Lustre subdued to meet the mode. And, most important, uniform and dependable, as the brand mark "du Pont" vouchsafes.

Discover a leader in textile manufacture—and almost invariably you disclose a user of Du Pont Rayon.

Du Pont Super Extra Yarns are *truly* multi-filament

Denier	*Filaments*
65	26
80	30
100	40
125	50
150	60
170	60
200	80

Du Pont DU PONT RAYON REG. U. S. PAT. OFFICE *Super-Extra Rayon*

DU PONT CHEMICAL CONTROL ASSURES DU PONT QUALITY

pletion of the work of the Classification Committee of the Silk Association, to give the trade definite standards of grading. The manufacturers, both large and small, now have for the first time the basis to maintain an unvarying standard for practically all the more important characteristics of raw silk. The new Seven Panel R.S.C. boards were ready early in the year. They were distributed widely but the results of all this intensive effort have not been noticeable except in the case of a handful of the largest firms. The hosiery trade has found the standards of much assistance, as have the larger broadsilk houses. The rank and file of the broadsilk manufacturers representing a considerable proportion of the trade have been content to go ahead on a hit and miss basis. Needless to say such a policy has been a costly one. Last year the whole trade needed, and needed badly, large quantities of carefully reeled silk for use in weighted goods. The silk was not forthcoming in anything like the necessary quantities. The result was that, having no method of finding out just exactly what grades were going into their goods, vast quantities of the lower grades were accepted under the name of a higher grade.

Both the fall season and the spring season found the trade with immense quantities of weighted flat crepes and satins that could not be disposed of as firsts. In view of the disappointing results obtained, jobbers and dress houses were disposed to be over-critical. When the price of satin crepes broke in August, buyers searched frantically for every loop-hole through which they could crawl to get out of their contracts. The streaks and bars on the majority of deliveries of merchandise presented a welcome opportunity and they made the most of it. For several months following the fall season the principal occupation of manufacturers and thrown silk houses was settling claims, examining goods, and making allowances.

The reason for all of this was, of course, the fact that millions of yards of merchandise were made up out of grades of raw silk that should never have been used. Ignorance of the actual grade was the primary cause but market conditions also played a part. When the price of a staple construction of gray goods permits a certain price to be paid for crepe filling and not a cent more, the manufacturer is more disposed to take a chance that things will come out all right rather than to turn down the order outright.

As the year wore on, it became apparent that Canton silks were coming in with cleaner and evener characteristics than for several years. Mills had to use them for the same type of cloth, a cheaper grade crepe, but the elimination of some of the major defects that had discouraged their use, caused the 14/16 size to be regarded with more favor. Some of the manufacturers who had used them and given them up, started putting quantities in work. At the end of the year, it was estimated that a greater number of mills were using Cantons than at any other time since 1925.

Price Trends

The trend of prices throughout the entire 12-month period was rather steadily downward. Market movements lacked interest in the case of Japans and fluctuations at all times were small. The low point was made late in November and early December when quotations were at the lowest level in over a decade. By the close of the year, however, a definitely firmer situation had developed. Prices had rallied substantially to a level, in the case of New York, about 30c to 40c a lb. above the bottom. Possibly the most significant development was the practically entire elimination of the short selling that had dominated New York market prices for such a long time. This could be taken to indicate a belief on the part of sellers that the long major decline had reached its culmination.

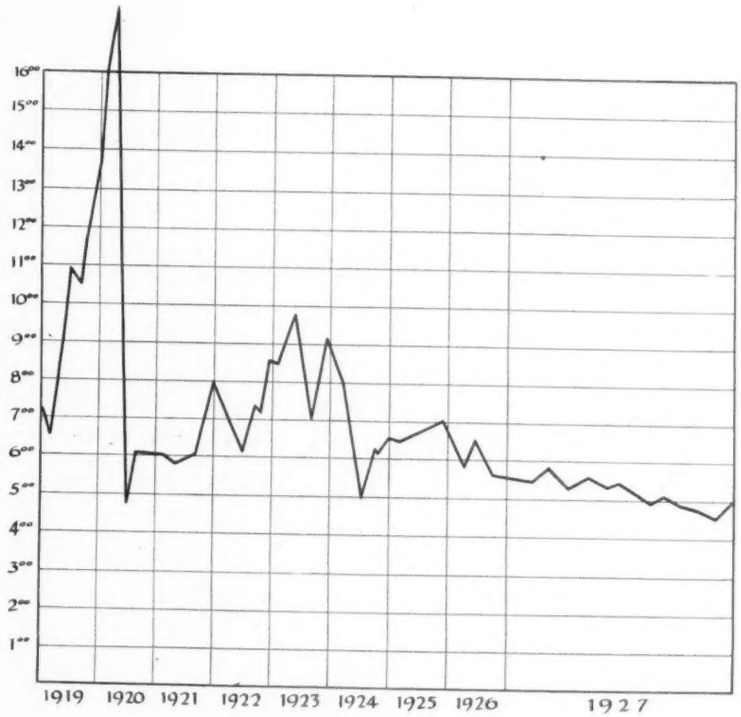
For the first four or five months of 1928, every indication points to a stabilized market with X's selling slightly below $5.00 a lb. The Canton market is also expected to hold in the neighborhood of $4.00 for the 14/16 grade. For the longer range future, it is hard to see how any advance of consequence could be maintained. No sign points to inflation of commodity prices in this country and still less does the situation in Japan indicate any rise. In both countries, raw silk prices are somewhat below general commodity levels but competition with rayon and other fibers and the increasing quantities available in Japan make it likely that the longer trend is still downward.

Ribbons Fare Poorly as Prices Sag

Style Simplicity Curtails Use by Dress Trade—Inventories a Problem

THE ribbon trade found conditions somewhat less satisfactory than in 1926 when an increased call for several purposes took the trade more or less out of its rut. Demand fell off for the brighter hued hatbands following a very active spring. A large production on these numbers found a temporary oversupply that caused some curtailment during the late spring and summer. The public's appetite for the colored bands showed no abatement and the practice of buying several bands in succession for the same hat also accounted for good sales. In spite of all this the trade caught up with requirements and this temporarily eliminated the possibilities in one direction.

Other users of ribbon showed no marked change in their attitude of caution and non-interest. Retailers during the year probably took as much or possibly more in the way of ribbon than in 1926 but continued their close buying which forced the manufacturer to carry large stocks in a declining market. As regards the cutting up trade, results were very disappointing. It is here that the chances of a real change for the better lie but cutters' interest in ribbons declined during the year if anything.



Price Trend in Raw Silk—Basic Grade

The very large call for the garments to be made up and merchandised at a price almost makes this attitude obligatory on the part of dress houses. Labor costs are high so that every detail must be watched carefully, particularly when they are cutting hundreds of any particularly successful model. Trimmings appear to be costly beyond their power to attract buyers' interest and are naturally skimped on. Ribbons naturally suffer in this process of cost elimination. In copying Paris models dress manufacturers are reported to be continuing their practice of ripping off the ribbon trimmings.

Progress in Accessories

In the field of accessories further progress was made but much of the gain here may have come at the expense of regular sales of ribbons over the counter in yard lengths. Women now prefer to buy their accessories already made up rather than buy materials and make them themselves. Considering the decline in home-dressmaking, too, ribbon departments reported encouraging sales in most cases.

Millinery took good quantities of the belting and grossgrain types with some help in this matter by reason of the desire of many for higher priced and more distinctive hats. Velvets came in later in the year to add to volume. It cannot be gainsaid though that it will be a hard job to wean the average girl and young woman away from the simple cloche and turban styles in felt and straw which take no ribbon at all, or very little.

Reduced Plant Operations

A reduction in plant operations during the months of July through October could be judged from the employment and machine hours operated figures of the Silk Association. This can only reflect a decline in demand during those months. That this should come at a time when the raw market was falling was decidedly unfortunate. Ribbon houses have been forced in recent years to carry very large stocks so as to maintain a steady flow of goods in the small quantities that are now requested. The problem of carrying these inventories through a protracted drop has not been one that is calculated to bring cheer to the trade as a whole.

The Outlook

In one respect, however, ribbon mills are better off than the broadsilks and that is in their ability to maintain selling prices in the face of large inventories. Their longer experience in this respect makes this problem at least less acute. The year 1928, in view of the lower raw market and the chances of improvement in style demands, offers the prospects if not the certainty of a decided change in conditions.

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WHITE Celanese brand yarn is a pure, *snowy* white—a *natural* characteristic, not produced by chemicals or bleaching. Hence it retains its whiteness permanently, and will not turn yellow from washing or from age.

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Rayon Recaptured Its Reputation For Price Stability In 1927

Quotations Recover Slightly during Year but Total Fluctuation is Only 5c a Pound

FOLLOWING several years of declining prices, the rayon market struggled mightily in 1927 to justify its hard won reputation for stability and succeeded. Unlike the chameleon that endeavored to uphold its reputation on a Scotch plaid and expired in the process, the rayon market found new life in the attainment of its desire. The year just completed was an extraordinarily successful one for every concern of a size that would permit it to obtain the necessary efficiency in manufacturing operations. With list selling prices down to very nearly half of what they were in so recent a year as 1923, the progress made in reducing costs in the intervening period is obvious.

Reducing costs, however, was not the real problem that confronted producers at the end of 1926. With the situation that existed at that time, the real thing that they had to do was to increase sales. To understand how vital it was for them to dispose of more rayon, it might be well to review the conditions that existed.

During the years following the war the use of rayon had grown steadily. High prices for cotton, silk, and wool, particularly the two first named, had in 1923 and 1924 given an unexpected impetus to the growth of rayon which gave indications of developing into a full-fledged boom. In 1925 boom conditions actually made their appearance. The large profits to be made on the basis of $2.00 a lb. for the staple 150 denier size brought a flood of new enterprises into this new textile Golconda. The established concerns made haste to expand their own output so as to enjoy the full benefits.

Most of the new concerns were able to get into production in 1926 and the new units of the older companies also added their bit to the flood of rayon that came on the market. It is, of course, not necessary to consider the froth in the shape of the stock-jobbing outfits that never got beyond the prospectus stage. From data in the way of producers' stocks which have only come to light recently, it is now known that through the first half of 1926, production exceeded consumption by a considerable margin. Even the cut in prices to $1.65 in July did not entirely remedy this situation and in December the large companies were forced to again drop their selling levels to $1.45 this time.

Heavy January Stocks

Such was the state of affairs at the beginning of the year under review. Production had consistently exceeded consumption for 12 months and stocks in the hands of the larger firms were at a peak. An estimate would place them in the neighborhood of 12,000,000 lbs. or more. While it would be an over-statement to call matters critical, the situation as it existed certainly called for some such heroic remedy as the cut in prices to a $1.45 basis. Two things had to be accomplished: First of all the current use of rayon had to be brought up to the point where it equalled production; and second, and on top of this, the market had to be expanded to a point that would consume the surplus that undoubtedly existed in the hands of nearly every maker.

The results were immediately apparent. Business got under way with a zest in January, favored by the fact that importers of continental rayon had a temporary lull while imported prices were adjusted to the new domestic basis. Stocks of foreign yarns had risen to over 2,000,000 lbs. on Dec. 31 and while the good demand noted during January had reduced these to 1,400,000 lbs. on Feb. 1, it was not until March that appreciably larger quantities of yarn were coming through. There naturally would be some slack because of the necessity of readjusting foreign plant schedules, and the fact that the yarn itself would have to be prepared for export, to say nothing of the little jaunt across the ocean.

The exceptionally large demand for rayon that the cut in prices brought in its wake, is well illustrated by the import figures of the early months of 1927. Imports during February were 852,000 lbs. and stocks diminished in the month period by 324,000 lbs., indicating deliveries to customers of 1,176,000 lbs. February, however, is a short month with two holidays so that March tells the story more clearly. In March 1,718,000 lbs. were brought in and stocks diminished by 22,000 lbs. in spite of the large imports. Deliveries in this month were 1,740,000 lbs.

Peak in May

If the indications of the imported yarn are correct and we may assume that they present a true picture of conditions, the peak of the spring boom was reached in May when 1,820,000 lbs. of imported yarn were shipped to mills. Probably at the time quantities shipped were making a new high, sales were either showing a falling off or import houses believed that they would, for imports during June declined to 1,311,000 lbs. and consumption fell off likewise, and about to the same extent. By July mill takings had shown a considerable drop but this month is a normally quiet one anyway.

Domestic Business

Domestic business in the meantime had expanded during January and February in a manner comparable with the imported yarn. During February jobbers were asking and obtaining large premiums without difficulty, a condition that had not been observed since 1925 or two years before. Late in February and early in March, rumors began to be heard that an advance in producers' prices was imminent. The exact amount that quotations would be raised was a matter of conjecture. Guesses ranged up to 15c and even to 20c a lb. When the actual announcement was made and rayon consumers realized that the advance amounted to only 5c a lb., the situation was not immediately cleared. Many believed that additional rises would be put in force and that it was going to be done gradually so as not to have the process too abrupt. This view was helped along by the utterance of one company executive to the effect that additional advances would be considered when the situation justified them.

It is thought that practically the entire surplus of upwards of 10,000,000 lbs. of domestic yarn was cleaned out in the very active months of January through May. Through the summer and fall months business maintained a good pace with production and consumption apparently nicely balanced. The further rises that seemed so sure in March never materialized although certain adjustments in various directions were made at different times during the year. At the end of the 12 months, the entire price variation, eliminating resale and jobbers' prices, held within the extremely small range of 5c a lb. for viscose yarn.

As the year closes, the price outlook for rayon is rather definite. Neither advances nor declines seem likely to cloud the horizon for some time to come. Due to the usual spring rush to get goods through, some are predicting that premium will again be in force by February. The larger companies, however, are accepting contracts for February, March, April delivery and it is believed that increases in consumption can be taken care of. The work of the Rayon Institute should be a factor in expanding demand and the national advertising program planned will play a big part in making the country "rayon-conscious." Considering the expansion under way and planned, the price situation seems well balanced.

Use of Multi-Filament Yarns

(*Continued from page* 147)

We have seen but little synthetic yarn used in full-fashioned hosiery. The demand seems to be today for a full-fashioned hose selling for between $1.00 and $1.25. This hose will be equal to 7-thread or 10-thread silk, and we find now that a multi-filament yarn, with its subtle luster, has great appeal, and we can expect large quantities produced, particularly on types of machines such as the 39-gauge machine, many of which would otherwise remain idle.

Manufacturers of circular underwear have recently found a greater demand for softness and strength in the wet state, and such garments made of multi-filament yarns, creating a new appeal, will enable manufacturers to sell a wider range of tubular goods.

The broadsilk industry is accepting, more and more, synthetic yarns, and there seems to be no detrimental effect upon the quantity of raw silk consumed, there having been greater quantities of the natural fiber used in 1927 than in any previous year.

All of the above would seem to indicate that there will be a much greater demand for synthetic yarns in 1928 than the additional production of 20% will take care of for that period. Manufacturers of multi-filament yarns will have considerably increased demands placed upon them by manufacturers desiring to develop quality fabrics.

Rayon Demand Sure to Increase

By Leon H. Ryan

General Manager, Delaware Rayon Co.

WITH the increased use of rayon in all parts of the textile industry, we look forward to 1928 with considerable optimism. Practically all manufacturers are starting with very small inventories, indicating that the consumption of 1927 was correct as compared with the sales.

We are confident that the demand for our goods is going to be greater than the supply. We feel that the increased demand is due almost wholely to the fact that improved yarn is being furnished to the trade and the result is a stable business that is sure to grow.

Why CIRCULAR KNITTERS get faster production with TUBIZE

FOR greater more economical production, with a higher degree of general efficiency, circular knitters, especially in the underwear field, are specifying TUBIZE. Ten men, prominent in the knitting trade, whose experience includes many years of manufacturing, gave us as an important reason for their continued selection of Tubize, the following:

Tubize is a Clean Yarn

There are less broken filaments in this yarn, and therefore less knots. Idle machines, which increase the overhead, are almost unknown with Tubize. Its unequalled strength, a fact which every knitter knows, permits the machines to maintain a greater and a more uniform speed.

If your plant includes circular knitting machines, or if you contemplate their installation, it will be greatly to your advantage to sample and test Tubize. If we can be of service to you in securing the same maximum production that other knitters are getting, write or telephone us.

TUBIZE ARTIFICIAL SILK CO.
of America
303 Fifth Avenue, New York
Factories: Hopewell, Va.

TUBIZE yarn
"wears longer because it's stronger"

Tubize
Reg. U. S. Pat. Off.
Brand YARN *Made in U. S. A.*

British Rayon Industry Found in 1927 The Best Year on Record

Despite Inauspicious Start, Production and Consumption Reached New High Levels

By J. Guthrie Oliver

MANCHESTER, ENGLAND.

THE past year has been a remarkable one in the history of the British rayon industry for from a most inauspicious beginning the trade developed into the best on record. The general world position of the industry at the close of 1926 is well known and there is no reason to suppose that stocks were not extremely large in this country, although no official figures are issued to confirm this. The effects of the coal strike moreover had not worn off.

Returns of the weight of rayon yarn subjected to excise duty are published in this country at quarterly intervals but details of the actual output are by no means so regularly available. It is fortunate therefore that I am able to give the output of the various plants in the first three months of both 1926 and 1927. In the following table it will be seen that in these periods the state of affairs was completely reversed. In 1926, the output was considerably greater than the amount subjected to excise which may be assumed to be the best guide to actual sales. In 1927, output was very much less than the sales or amount excised.

Table No. 1. British Yarn Output

	Actual Output lbs.	Amount Excised lbs.
Jan.-March 1926..	7,171,401	6,081,395
Jan.-March 1927..	7,057,709	7,765,309

The steady progress recorded throughout the first nine months of 1927 is shown in the following table:

Table No. 2. British Yarns—Weights Excised

	1927 lbs.	1926 lbs.
Jan.-March	7,765,309	6,081,395
April-June	8,742,602	5,951,953
July-Sept.	10,942,108	6,722,074

Production for Year

It is confidently anticipated that the total British production for 1927 will be between 36,000,000 and 40,000,000 lbs. as against slightly over 25,000,000 lbs. in 1926. While during the last quarter of the year, the detailed figures for which period are not yet available, the contribution of the new companies will be fairly substantial it may be taken that in the earlier part of the year almost the entire output was provided by Courtaulds, Lt., British Celanese, Lt., Harbens, Ltd. and one or two others.

During the whole of the period under review British prices for home account have remained extraordinarily stable. It is the avowed policy of the leading producers to keep the market as far as possible free from fluctuations and this aim has been attained in a marked manner.

Foreign Trade

The weight of yarn imported from foreign countries has increased to a certain extent throughout the year but the totals have never been large since the imposition of the customs duties in July, 1925. The total imports for the first eleven months of the year were 2,524,680 lbs. against 2,152,138 lbs. in the corresponding period of 1926. It is also interesting to note that the average value of these imports increased from 4.02 shillings per lb. to 4.37 shillings per lb.

On the other hand the yarn export trade, which up to June had not shown any really marked revival bounded forward after that month and for the first eleven months of 1927 the total exports were 7,629,888 lbs. against 5,342,598 lbs. in the corresponding period of 1926. It is apparent from the fact that the average value of these exports declined from 5.85 shillings per lb. in 1926 to 4.32 shillings per lb. in 1927, that a cut had been made in the prices charged to foreign buyers. In the case of India, which is rapidly becoming a market of the greatest importance for yarns, the British policy was so effectual as to gain for this country the lead over Italy in the matter of imports of yarn. In view of the fact that the Indian authorities have now decided to give an impetus to this trade by substantially reducing the tariff, the regain of British ascendancy in the market is especially significant.

Rayon Goods

Turning to manufactured goods we find that imports have risen to a very marked degree for in the first 11 months of 1927 the total value imported was £5,128,228 whereas in 1926 it was only £3,426,439. In view of the customs duty this position may at first sight appear to be a little peculiar and it certainly requires some explanation. It will be recollected that the British duty on yarn was fixed at two shillings per lb., while that on manufactured goods was 33 1/3% ad valorem. Since these duties were fixed, however, the average price of rayon has distinctly fallen and as a consequence the effect has been to make the yarn duty proportionately heavier than the duty on made-up goods. Continental manufacturers, therefore, buy the yarn from their own producing companies, make it up and export it to England. The matter is one which is engaging the attention of leading people in the trade and may well lead to a slight revision in the duties.

Exports of manufactured goods in the first 11 months of 1927 totalled £5,188,877 against £4,991,623 in the corresponding period of 1926. Allowance must, however, be made for the reduced cost of cotton which figures very largely in the returns for this trade. In the following table an attempt has been made to classify the export trade in the first 10 months of the year, the latest period for which complete details are available:

Table No. 3. Exports of Manufactures

	1927 (Jan.-Oct.) £	1926 (Jan.-Oct.) £
Cotton & rayon mixts.	3,614,042	3,517,317
Wool & rayon mixts.	277,017	254,138
Other	698,477	751,059
Total	4,589,536	4,522,514

The extent to which the figures of value are misleading may, however, be estimated from the fact that in the period mentioned in the last table the actual yardage of cotton and rayon mixtures exported was 56,162,309 sq. yds. in 1927 against 49,780,833 sq. yds. in 1926. Wool and rayon exports were 1,624,214 sq. yds. in 1927 against 1,298,852 sq. yds. in the corresponding period of 1926.

In addition to the above there has been a considerable increase in the quantities of rayon hose exported. In the first 11 months of 1927 exports of this class reached 760,537 doz. pairs against 652,090 doz. pairs in 1926 but the latter figure included real silk hose exports which probably amounted to approximately 70-80,000 doz. pairs.

Home Consumption

The actual home consumption of rayon in Britain can only be obtained from the excise figures to which may be added the imports and from the total thus gained, the exports are deducted. In the table below, calculations worked on this basis are shown:

Table No. 4. British Rayon Consumption

	1927 lbs.	1926 lbs.
Jan.-March	6,589,092	4,858,934
April-June	7,610,531	4,783,985
July-Sept.	9,157,866	5,692,621

At the rate of progress shown above the total British consumption for 1927 will be approximately 30,000,000 lbs. against 22,000,000 lbs. in 1926, an increase of 37%. It will be noted however that while exports of yarn have been deducted to arrive at the home consumption, no account has been taken of the large amount of yarn used by manufacturers in this country but exported in the form of finished goods. The actual weight of rayon exported in the form of cotton and rayon mixtures in the first nine months of 1927 was approximately 2,500,000 lbs. and it may be estimated that the total weight of rayon exported in all forms of manufactured goods was approximately 4,000,000 lbs. for the first nine months and on this basis would be 5,500,000 lbs. for the year. We have thus indicated an actual net home consumption by the British public for 1927 amounting to approximately 24,500,000 lbs. On this basis it would appear that the public in this country is not buying rayon as yet in quite such large quantities as are the public of the United States.

Increasing Plant Capacity

Productive capacity here, however, is in no way equal to the demand and we must examine the methods by which this position is rapidly being remedied. It is sufficient to say that every one of the established producers is engaged on the installation of new plant. This particularly applies to Courtaulds, Ltd., and to the British Celanese Co. The next group of producers included among which are Harbens and the British Enka Artificial Silk Co., will shortly be turning out between them no less than 7,500,000 lbs. per annum. Current estimates place Courtaulds' output at 220 tons per week and British Celanese at 60 tons per week. In addition to the above there are what are known here as the "1925 companies"—British Visada, Western Viscose, Sunsheen,

An apparent increase in production of rayon in Great Britain from slightly over 25,000,000 lbs. in 1926 to between 36,000,000 and 40,000,000 lbs. in 1927 is one of the outstanding facts brought out in the accompanying review.

The author, who is in close touch with rayon developments in his country, analyzes the imports and exports of both yarns and finished goods.

Of particular interest is his warning that demand may not keep pace with production throughout another year. In other words, he is merely recognizing the possibilities of "dips" and "peaks" which have been mentioned repeatedly in these columns but which have no bearing on the almost certain expansion of demand over the broad future.

When You Buy INDUSTRIAL *You Receive More Than* RAYON

WHEN you order Industrial Premier Rayon, the sale is not consummated—it has just commenced.

Your interests are paramount. Industrial must meet them in *every* way.

So, we are not satisfied in making Industrial Premier Rayon simply the best we know how··· we go even further—

—we cooperate with you in its use through our technical department, to the end that the product gives that thorough *satisfaction* which you have a right to expect.

Thus, when you buy Industrial Premier Rayon, you receive not only merchandise but merchandise service reflected in the ability, interest and capacity of our entire organization.

INDUSTRIAL RAYON CORPORATION
Successor to
THE INDUSTRIAL FIBRE COMPANY, INC.
General Offices and Plant: Cleveland, Ohio

NEW YORK CITY
200 Madison Avenue

NEW BEDFORD, MASS.
Wamsutta Mills, Inc.
(New England States)

CHARLOTTE, N.C.
407 Wilder Building

PHILADELPHIA, PA.
441 The Bourse Building

UTICA, N.Y.
Utica National Bank and Trust Building

PREMIER INDUSTRIAL RAYON

Nuera, etc.—who are rapidly adding to their productive capacity and the ranks will shortly be supplemented by the Branston Artificial Silk Co., with an initial output of 2,500,000 lbs. per annum.

The Outlook

In view of this rapid increase in the production in the country, reasonable people are examining the possibilities of its absorption. It is difficult to find many people who are pessimistic as to the outlook but they appreciate, that perhaps earlier than is generally expected, a set-back will come. There is no feeling of doubt as to the future of rayon generally but the demand may not keep pace with production right throughout another year. At present there are no clear indications of the actual trend of fashion in the early summer of next year but it is generally thought that the cotton and rayon mixtures will again predominate and that demand will be greater than ever. In the event of a slump coming, it is felt here that the influence of the International Cartel will be sufficient to stop any wholesale demoralization in the price situation though troubles are anticipated as a result of weak selling by smaller concerns badly in need of ready money A greater danger, however, lies in a tendency, hotly contested by the leading producers, towards deterioration in the quality, not only of finished goods, but in the actual yarn It is realized that this would be fatal and would cause a setback from which the industry would take a year or two to recover and it is to be hoped that it will be checked in its infancy.

In other directions, the future appears to require more publicity for rayon. More of this is done here than may be apparent to the resident abroad, but there is need for further concentrated effort and for greater education of the retailer. The development of foreign markets is the other main outlet for the increasing quantities of the fiber and efforts are being made in every direction to satisfy the world demand. While in many cases the British policy in foreign and colonial markets may have appeared to have been lacking in initiative it may be said that in many cases the leading producers of the country have acted with a sagacity which will only be apparent as time goes on. They have never entered into cut-throat competition and have thus conserved their profits and gradually obtained a worldwide influence over the industry.

European Rayon Development Closely Tied Up with United States Consumption Curve

If Demand from This Country Falls Off, Strong Competition for Other Markets Will Ensue

Prepared Especially for TEXTILE WORLD

Will demand for rayon in this country continue to exceed domestic capacity to produce?

On the answer to that question, according to the author of the accompanying article, depends the future trend of the European industry. If shipments to the United States fall off sharply, a period of keen competition for other markets is inevitable.

The author recognizes in the International Cartel a healthy influence toward price stability, standardization of yarns, and maintenance of quality. He does not believe that it will act against the interests of the consumer.

In view of the present close relationship between the American and European situations, a review of the latter is of particular interest this year.

IN the present review of the rayon trade in Europe the stereotyped methods of presenting the latest details in regard to the individual companies have been dispensed with and an effort has been made to present to TEXTILE WORLD readers the position of affairs in Europe in so far as it affects the American industry and as it is affected thereby. It is possible that some of the remarks made may appear to be at variance with the accepted ideas in the United States but it will be borne in mind that they show the situation as it appears to European eyes.

In the first place it may be taken for granted that the European rayon industry is very much indebted to the United States. For whatever inventions Europe may have been privileged to present to the United States, she has been well repaid by demands for yarn. During the last year the exports of rayon yarn from Europe to the United States were approximately 16,000,000 lbs., a figure which may be better appreciated when it is explained that it is equal to from 40-50% of the entire British output. As a matter of fact, however, Britain had little share in this business, but almost all of the other large European producing countries were engaged in trade on a large scale with the United States.

The European rayon industry recognizes that this huge demand is consequent, to a marked degree, upon the inability of the United States producers to supply the demands made upon them. For this reason Europe is intensely interested in the course of demand in America. It is possible that the United States still consumes more rayon per head of the population than any other country in the world and the question is naturally asked whether or not she is nearer to the saturation point.

It is appreciated that in the event of the American plants being in a position to supply all demand in the United States, a big drop would occur in the exports from Europe. A considerable trade would no doubt still be carried on but this would be on a highly competitive basis and the American market would not continue to hold the importance it has today.

Export Situation

During 1926 all the European producers were piling up stocks and at the end of the year, the position, while not alarming, was rather discouraging. Happily, however, demand increased in all directions and the call from the United States was met in part. A careful summary of the trade of Europe during 1927 shows that the surplus for export was no higher than in the previous year. Actually therefore the European countries absorbed among themselves the increased production, and if it had not been for the surplus stocks held at the beginning of the year, it is possible that the United States and other export markets would have been unable to obtain any greater supplies than they did in 1926.

This position is interesting for it explains the difficulties of United States importers in obtaining yarns from Europe in the latter part of the year and gives reason to the gradual increase in the average price of exported yarn from Europe. Owing to high customs barriers erected between the various countries or states in Europe, internal trade is somewhat limited but in the case of Germany where production was quite unequal to demand, arrangements were made for large importations from other countries, mainly Italy.

With the export position thus explained, we may now endeavor to visualize the future. First, either the United States will continue to require large quantities of yarn from Europe or production will have so grown in the United States as to make this course unnecessary. We have not the information here to judge as to the likely course of events in the United States but the faith of the Glanzstoff and Bemberg companies is sufficient to allow them to arrange for the erection of huge plants on that side of the Atlantic. It may be assumed that when these plants are built the export of yarns from Germany to the United States will appreciably diminish.

Trade Changes

The two most important countries further concerned are Holland and Italy and the position of these two producers is closely connected with the state of the trade in the United States. During the first eight months of the present year changes have taken place in the destinations of Italian exports which have more than passing interest. The position is shown more clearly in the following table:

Proportion of Total Exports Sent to:	*Jan.–Aug., 1927* %	*Jan.–Aug., 1926* %
Germany	25	13
United States	20	10
India	14	13
China	9	15

It will be seen from the above table that in 1927 Italy sent no less than 69% of her exports to the four countries mentioned against 49% in the previous year. Briefly then, Germany and the United States have taken a large proportion of the former trade with Japan and other countries not mentioned above. The fall in exports to Japan is due to increased home production; will the same state of affairs operate in the case of the United States? Assuming that in the course of a few years the proportion of Italian exports to the United States be reduced to 10% or even less, we must endeavor to visualize the position. It is certain that by that time exports to Germany would be proportionately reduced and Italy would be forced to distribute 25% more of her exports in the other markets of the world.

The position is not a new one. Only two and a half years ago Italy was sending nearly 40% of her exports to Great Britain and this has now been reduced to very minor figures. This was the direct result of the English duties and was followed by intensive competition in the East. For a considerable period Italy sent larger quantities of yarn to India, China and Japan than Britain did and it is only recently that Britain has shown that at least a portion of this trade is being won back.

If therefore we take the example of Italy, we may expect that if the large

(*Continued on page 267*)

DELRAY YARNS
made by
DELAWARE RAYON COMPANY

for distribution to users of Rayon of

DEPENDABLE HIGH QUALITY

We are producing a yarn which gives to the finished fabric a body soft and strong and different to the hand. High tensile strength, elasticity, level and uniform dyeing, and evenness of denier are

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by experts with the experience of ten years' production of the best Rayon and who are always at your service to advise or help.

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185 Summer St.,
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Western Representative
J. M. Richards, 166 Jackson Boulevard, Chicago

Educational Activities of Rayon Institute of Vital Interest to Textile Mills

Cooperative Effort of Yarn Producers Means Broader Consumer Acceptance of Rayon Products

By Douglas G. Woolf

THE new spirit of cooperative effort which has infused the textile industry has been evident not only in the older branches of manufacture but in such a comparative youngster as the synthetic fiber field. The formation of the Rayon Institute, organized for the advancement of the industry, is an outstanding example of this type of effort.

Formed during the latter part of 1927 by four prominent rayon manufacturers, this Institute promises to be an important educational factor, the influence of which will be felt not only by producers of the yarn itself but by weavers and knitters who fabricate the material into cloths and garments. In addition the ramifications of its work should extend into the wholesale and retail distributing field.

It is particularly appropriate that such a development should come to pass in the rayon industry because this material is still a newcomer comparatively, and subject to the dangers threatened by mis-information and lack of information on the part of distributors and ultimate consumers.

Despite the remarkable progress which rayon has made in recent years, as evidenced by the phenomenal increase in consumption and by the admission of rayon products into the displays of the best stores of the country, there is still much to be done before the average consumer has a correct understanding of the part which rayon is entitled to play in his or her wardrobe and in furnishings of the average home.

As a matter of fact the term "rayon" itself is only about two years old. Its general acceptance has done much to dissipate the false impression created by the original term "artificial silk" and to enable this synthetic fiber to stand on its own as an individual textile material. It is important that such prejudice as may still exist should be eliminated.

Three Lines of Approach

To effect this broader and more intelligent consumer acceptance, the Rayon Institute plans at the start three distinct lines of approach. These will include educational advertising in trade and consumer publications; dissemination of informative editorial material; and visual demonstration of the possibilities of rayon through travelling style shows.

It was particularly interesting to the writer to note that those actively connected with the Institute interpret their publicity function as one of the education rather than propaganda. Recognizing the need of more widespread knowledge as to just what rayon is, what it can be used for and how it should be handled, they see in these directions ample scope for their promotional activities. Consequently the advertising aimed to reach both distributors and consumers will be of a type which will help the former in more intelligently selling rayon products and the latter in reaching a more intelligent appreciation of this material and its possibilities.

Similarly the editorial material prepared by the Institute, will be along educational lines exclusively.

Style Shows

Possibly the most interesting phase of the Institute's work will be its style show effort. It is generally recognized that style plays a greater part in the sale of apparel today than ever before. Particularly where women are concerned, it almost entirely obscures such influences as price and durability. Consequently it is essential that prospective purchasers be enabled to visualize the appearance of garments which may be made of rayon, either alone or in combination with other fibers.

To make possible such visualization, the Institute has secured a large number of the most effective garments produced by leading designers in both France and this country. Under the direction of a stylist, fashion shows will be made available to retailers, principally department stores, throughout the country. Women who attend these exhibits will also have an opportunity to learn at first hand answers to any questions they may have regarding the desirability or utility of rayon materials.

Scope Will Broaden

Naturally the program of advertising, editorial promotion and style show exhibits is sufficiently broad to occupy the full time and attention of the staff of the Institute in its initial phase. However, it is recognized that the organization has an almost unlimited scope and it is felt that its activities will be continually broadened in the future.

There is for example much to be done in the development of economic and statistical research. A noteworthy start in this direction has been made through the cooperative effort of The Viscose Co. and the Dupont Rayon Co., acting in conjunction with The National Retail Drygoods Association. The first study undertaken in this direction was on "The Trend of Women's Underwear Sales," the results of which were published last year in the form of an illuminative and comprehensive report. Other studies are under way which promise to be equally valuable in nature. No plans have been made as to the centralization of such work within the organization of the Rayon Institute but it is quite possible that in time this body will become the research center of the rayon industry.

A Clearing House

Of even greater importance is the possibility of the Institute as a means of contact between producers of rayon yarn, manufacturers of rayon fabrics, wholesale and retail distributors, and ultimate consumers.

It is needless to point out that textile manufacturers have as much to gain through the effective educational work of the Institute as have the producers of the yarn itself since it means a broadening of the field for materials made of rayon either as a self fiber or in combination with other textile raw materials.

(*Continued on page 271*)

Paris approves **RAYON**

10,818,633 American women will read of rayon's triumph in the capital of the fashion world

ON this page is reproduced an advertisement in which Paul Poiret, noted Parisian designer, endorses rayon fabrics as truly fashionable. It shows a rayon gown designed by Poiret himself. It interprets the rayon story in terms of vogue, of smartness.

Appearing in Delineator, Good Housekeeping, Ladies Home Journal, McCall's, New Yorker, Vogue, New York Times rotogravure, McCall, Butterick and Pictorial Review quarterlies, this advertisement reaches a combined circulation of 10,818,633. It will be followed by similar advertisements featuring Lanvin, Drecoll, Callot and other prominent couturiers.

With millions of American women reading rayon endorsements from the highest authorities in the world of fashion, the prestige and popularity of rayon are certain to increase tremendously. Rayon already has established itself through its beauty, its durability and its moderate price. Its effectiveness, either alone or in combination with cotton, wool or silk, makes it the most versatile of all textiles. Now it has been given a style appeal through its acceptance by the Parisian designers who dictate the fashions of the world. The impetus of the style authority given rayon by its 1928 advertising will give rayon greatly increased demand.

RAYON INSTITUTE, 230 FIFTH AVENUE, NEW YORK CITY

Rayon

Type of Advertisement Used by Rayon Institute in Initial Campaign in Trade Papers. Consumer Advertising Will Follow

Rayon—Ally or Usurper? Silk and Cotton Manufacturers Still Uncertain

Total Production Outstrips Silk but Insignificant Compared with Cotton

By William A. Spafford

MANUFACTURERS of other textile fibers have learned some time ago to treat rayon with the respect that should be accorded success. While giving rayon its due, silk manufacturers and cotton manufacturers both alike are a bit uncertain as to regard this newcomer as friend or foe. Is it an ally that will enhance the attractiveness of silk or cotton goods when used in combination or is it a usurper? Will more cotton goods be sold because of the style features imparted by rayon filling or warps for instance or will every pound of rayon sold usurp the place which otherwise would be filled by a pound of silk or cotton or wool?

Opinion is divided on the subject. Certainly the matter cannot be decided on any hard and fast array of facts or statistics. In the first place it is difficult to determine the exact quantities of rayon consumed in all countries. Production figures are at best estimates which are only approximate. At their worst some of these figures are woefully inaccurate. Import and export figures of yarn which, taken together with the production in the country, should give the consumption, are often unreliable even when taken from official sources. With imports and exports of fabrics also to consider, we have all told a difficult task to determine the whole with precision.

The foregoing is the darker side of the picture. To offset it we have a great many sources of statistics which are wholly accurate or where the deviation is small enough so as not to distort any final conclusion. One thing is very certain: The production and use of rayon has far exceeded that of any other fiber in rapidity of growth since its early beginnings in 1896. The figures given below show the world output of rayon and are approximate only.

WORLD OUTPUT OF RAYON—ESTIMATED
(*Thousands of Kilos*—1 *Kilo* = 2.2 *Lbs.*)

1896... 600	1908.. 7,000	1917..15,500
1900... 1,000	1909.. 7,500	1918..16,000
1901... 1,500	1910.. 8,000	1919..20,000
1902... 2,500	1911.. 8,500	1920..25,000
1903... 3,000	1912.. 9,000	1921..30,000
1904... 4,000	1913. 11,000	1922..36,000
1905... 5,000	1914..12,000	1923..47,500
1906... 6,000	1915..13,500	1924..64,000
1907... 6,500	1916..15,000	1925..84,500

Comparison with Silk

In 1912 for instance the production of rayon was roughly 9,000,000 kilos which by 1925 had expanded to 84,500,000 kilos. In 1912 the estimated silk supply of the world—which does not include quantities of raw silk retained and consumed in the producing nations of China and Japan—was 25,000,000 kilos. By 1925 this had increased to 38,500,000 kilos, chiefly due to the large demand from the United States which was increasing its use of silk while the rest of the world was generally curtailing in its use. From these figures we can form two interesting conclusions: First, that rayon increased in output more than nine fold while silk was increasing 50%, or nearly 18 times as fast; second, that at the present time the total output of rayon is considerably greater than that of raw silk.

Comparison with Cotton

In the case of cotton, relative figures would be somewhat misleading for the reason that the great size of the cotton crop—from 6,000,000,000 to 8,000,000,000 lbs. in this country alone—overshadows the production of other textile fibers to such an extent that comparative figures would have little meaning. The United States is only one of several countries producing important quantities of cotton. An output of rayon of say 50,000,000 lbs. or even 100,000,000 lbs. cannot exercise any serious influence on cotton. Roughly speaking the production of rayon in this country is about one one-hundredth of that of cotton. It may even be as many claim that rayon, far from displacing cotton, has actually aided materially in the sales of cotton dress goods, bringing the latter in mixtures of cotton and rayon into a different and more diversified field.

While the output of cotton dwarfs that of rayon, there is reason to believe that the price of cotton during the years 1922 through 1924 had some influence on the mounting volume of rayon produced, as will be shown later. Competition by rayon, however, seems to have been most seriously felt in silks. This competition is indirect for the most part and has been obscured by the large volume of silk fabrics sold in recent years. It is indirect in the sense that silk weavers and knitters are not in large numbers directly giving their machines over to the use of rayon. Particularly is this true with broadsilk manufacturers. Looms that were weaving silks a few years ago are still weaving silks. The thousands of looms in Paterson and through Pennsylvania are still weaving the staple crepes. Only in special instances have silk manufacturers gone in seriously for rayon goods.

Where It Displaced Silk

In other directions, however, rayon has directly displaced raw silk. Cotton manufacturers formerly used large quantities of Canton and tussah silk. Up till a few years ago they bought large quantities of these silks in a converted state for use in fancy cotton and silk mixtures and in shirtings. Rayon has directly displaced them and reflection of this condition is seen in the price of tussah which recently declined to the lowest point in nearly fifteen years. Raw tussah which sold in 1920 at close to $8.00 a lb. and as late as 1923 at above $5.00 a lb. dropped to $2.00 a lb. in December of 1927.

Canton 20/22 and 22/26 was formerly used in large quantities by cotton mills. Today little is used which has caused reelers in the Canton district to reel the 14/16 size instead. The increasing quantities of 14/16 which are being absorbed by broadsilk mills in competition with Japan raws has brought the price down from $6.00 a lb. or higher, to $3.85. In the Canton district, recent reports have it that stocks of 20/22 and 22/26 are very small which would indicate that practically none of this size is being reeled at the present time. This condition has been brought about directly by the increasing use of rayon by cotton mills which has displaced the grades of raw silk which the southern mills formerly used. It is interesting to note that exports of tussah from Shanghai which averaged around 25,000 bales a year immediately prior to the war, dropped to an average of around 11,000 bales a year in the years from 1920 on.

It is doubtful if anyone will question the fact that the two grades of silk mentioned in the preceding paragraphs have been directly displaced by rayon. Although the trend was clearly manifest prior to 1926, it was the slash in rayon prices late in that year that really put the finishing touches to tussah and Canton, killing them as far as the year 1927 has been concerned. With regard to Japan grades the whole situation has been obscured by the tremendous increases in imports in recent years. During the year 1927 about 550,000 bales of raw silk will be imported of which close to 500,000 bales will be Japans. This compares with imports of Japan silk in 1921 of approximately 250,000 bales.

Effect on Japan Silk

Japan, however, has been able to increase her exports of raw silk only at the expense of a steadily declining market. In December of 1927 certain grades sold as low as $4.50 which compares with a prewar price of only slightly below this figure. In the United States during the years from 1920 on, everything has favored an expanding use of silk. Styles, changes in living conditions, together with the general prosperity of the country have all played their part. Yet with all these things rayon has cut in on the use of silk in many indirect ways. The increasing use of rayon underwear can be seen in the Du Pont Rayon Co.'s figures of sales. In 1924 sales for this purpose were 4% of a production of 3,700,000 lbs. Each year their production has grown and each year underwear knitters have taken a greater percentage of the total. During the year 1927, 37% of their 15,100,000 lbs. production has gone into underwear.

That this has displaced silk seems without question. It has taken the place not only of knitted silk underwear but also of crepe-de-chines and other silk fabrics which were woven for this purpose. The same company also reports a large increase in its sales to hosiery knitters. Recent years have witnessed a great increase in the use of high grade hosiery which has been made almost a necessity with the knee length skirts and dresses now worn. While the use of full fashioned silk hosiery has expanded tremendously, rayon has kept pace with this growth. In October 1927 the production of pure thread silk hosiery amounted to 1,600,000 dozen pairs while all rayon hose amounted to 500,000 dozen pairs.

European Situation

Taking the situation in Europe, it must of course be realized that the economic recovery that has taken place since the war still leaves most of the Continental nations with less surplus for luxuries or near luxuries than is the case in the United States. With less spending power it would be thought that the price differential in favor of rayon as compared with real silk, would cause a more rapid displacement of silk. While we have only general figures to deal with such would seem to be the case.

Exports of Asiatic raw silk to Europe—this includes Japan, Canton, and Shanghai raws—averaged 140,000 bales a year in the years 1911, 1912, and 1913. During the years from 1923 on it has averaged around 80,000 bales a year. The production of Italian raw silk, which in years gone by was an important factor in the silk markets, has likewise shown a great falling off. In 1925 it amounted to less than half of what it was in 1912, for instance. The export figures of Asiatic silk together with the production of Italian silk can be taken as an accurate index of Europe's consumption. These

definitely show a substantial drop. While this has been taking place, nearly every country in Europe has been doubling and trebling its production of rayon:

PRODUCTION OF RAYON

Thousands of Kilos

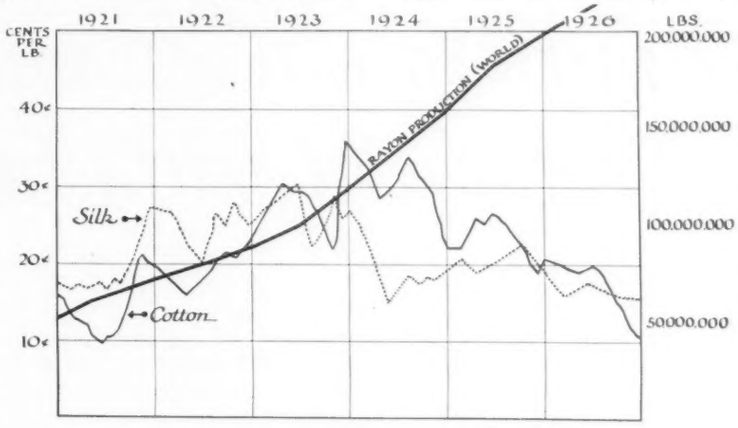
	1922	1923	1924	1925
Italy.....	3,000	5,000	8,000	14,000
Great Britain.	7,000	8,000	11,000	12,000
Germany.....	5,000	6,500	10,500	12,000
France.....	3,000	3,500	6,000	8,000

Relation to Price Trends

It is interesting to trace the connection or rather the probable connection between the price of cotton and raw silk and the increases in the use of rayon. The accompanying table shows the trend of prices of these fibers together with the world rayon production. It will be noted that the real boom years for rayon were from 1923 through 1925. The year 1925 witnessed the biggest boom of all with new companies formed by the score to exploit this new money maker and the established companies bending every effort to expand their own output. The result was naturally a serious overproduction in 1926 which brought prices down with a thud at the end of the year.

The causes for this boom appear to have their basis in the high prices for cotton and silk during the years 1922, through 1924. Cotton was particularly high during 1923 and 1924, as will be seen from the chart. Silk was high in 1922 and 1923 and though it came down in 1924, the cumulative effects of the high levels apparently carried over into 1925. If the high prices for these two fibers caused a boom in rayon production, in turn the increasing quantities available must have had some effect on cotton and silk. In the case of cotton the disparity between the relative quantities produced makes it likely that the price of cotton was influenced to only a small extent. In the case of silk, the influence on prices has been great.

Italian raw silk production has been seriously curtailed and while the price remains fairly high due to greater costs than in the Orient, its export has been almost entirely stopped. Tussah silk has dropped to the lowest price in well over a decade. Canton raws are down under $4.00 a lb. while the Japan market was recently within striking distance of prewar prices. Other factors have undoubtedly played a part in bringing down the price of raw silk, but to rayon must be allotted the leading role.



Rayon Production, and Silk and Cotton Prices

European Rayon Development

(*Continued from page* 261)

demand for European yarns on the part of the United States is checked, there will be strong competition for the other markets. The position has indeed been appreciated and the formation of the International Cartel will undoubtedly check any wholesale cutting of prices which might ensue.

Europe's Requirements

Under these circumstances, we see the European position in a clearer light. The urgent requirements are (1) an increased home consumption and (2) a vastly increased world demand. The case of Germany this year has shown that by a well worked out publicity policy, sales of rayon may be very much increased. There is little doubt that a considerable increase in consumption is possible in the other European countries but this is limited partially by trade depression with consequent reduction in purchasing power and partially by a policy of low wages, specially favored by some of the Southern European nations. Trade between the nations is seriously hampered by tariff barriers and progress in the expansion of the rayon industry must inevitably be slow.

On the other hand developments follow one another with such remarkable rapidity that it seems possible that new avenues for rayon may be opened up which will entirely solve the problem of possible overproduction and leave the industry in the present position of straining all out to catch up with demand. Short of this, however, and regarding the matter in the light of known facts, we may anticipate that sooner than perhaps is generally expected Europe will be faced with one of those temporary cycles of bad trade which are the inevitable part of the life of any industry largely dependent, as rayon is, upon the whims of fashion.

Outstanding Developments

During the last year several matters of outstanding importance, in addition to the signing of the International Agreement have taken place. In Germany the Glanzstoff corporation inincreased its capital from 18,300,000 marks to 60,900,000 marks. The company has now a large interest in the Dutch Enka Co., and the Italian Bemberg Co., in addition to its former participations and the American-Glanzstoff subsidiary.

The Neue Glanzstoffwerke A. G. was formed and expects to be producing 5000 kilos. of viscose silk per day in 1928. In addition to the Glanzstoff Co., the Dutch Enka Co. is closely associated with this venture.

Most important developments took place in connection with the Comptoir des Textils Artificiels in France. This great combine of French producers controls patents of vital importance to the world industry and has now apparently entered into close working with the International Cartel. One of the most interesting of the patents is the Rhodiaseta acetate rayon. This is being produced in large quantities by the Comptoir and is a rival of Celanese. A company has been formed to exploit the process in Germany and the DuPont Rayon Co., has taken over the rights for the United States. It is also rumored that Courtaulds Ltd. will work the process in England. Another patent held by the Comptoir is that for "Celta" hollow filament silk and the production of this is being gradually extended to other countries. The position of the Comptoir is rendered additionally interesting by the fact that the only other major French rayon combine is the Union des Producteurs and in this are the Soiries des Strasbourg and the Soie de Calais. The latter is owned by Courtaulds and the former are indirectly connected. It is not known yet how far the "rapprochement" with the International Cartel, which has been effected by agreement between the Glanzstoff and the Comptoir will extend towards Courtaulds and the Union des Producteurs soie Artificiels.

Extension of Cartel

The year has witnessed a great extension of the International Cartel and it is true to say that nearly every one of the large viscose producers is now connected therewith. On the other hand the acetate group of Celanese companies is outside the ring and there is naturally a certain amount of rivalry between the two. The cuprammonium producers are mainly represented by the Bemberg companies and are in close agreement with the viscose group. Nitro-cellulose is now produced in Europe on a small scale only.

The International Cartel is generally considered to have already proved a success and it will doubtless have invaluable effects should any slump and risk of demoralization of prices occur. It is certainly not likely to act against the consumer for there are influences which affect the price of rayon quite outside of its power. It is, however, likely to assist in the standardization of yarns and the maintenance of quality, the basic essentials of the whole industry.

Broad Textile Improvement Ahead

(*Continued from page* 123)

vances within 60 days were predicted. Weakening in the statistical position was mentioned in the early fall, which would cause any advances to be less than due. In November overproduction was said to prevent higher prices, and further weakening was predicted in December as the tendency toward excess production continued.

Cloth:—In December 1926 concessions were predicted on cloth following declines in yarn. In early 1927 firm and stable markets were predicted. In April and May concessions were looked for. From June until December firm markets were forecast. In December higher cloth prices were looked for due to higher raw.

Raw Silk Price

In December 1926 the *Analyst* stated that raw silk might be $5.00 by the middle of 1927. In January 1927, no sustained advance was considered possible and lower levels were forecast by the middle of the year. From February through June any recovery was called temporary and resumption of downward trend was said to be probable. In June stronger markets were looked for by fall. In the summer, silk was felt to be low and although not much further decline was expected, at least another month or two (probably more) would be required to bring any sustained advance. In September, the *Analyst* said that bottom was probably seen, but not much advance was possible in near future. In October irregularity and dullness were forecast. In November no sustained advance was looked for in near future and further weakness was considered probable. In December the bottom was thought to be passed and further recovery probable, but conditions were not considered favorable for a sustained advance.

Entitled to Better Prices on Finished Products

By L. W. Clark

General Manager, Carolina Cotton & Woolen Mills Co., Spray, N. C.

Our major product is made up of wide sheetings and blankets, varying from all-cotton to all-wool. Competition on these lines has never been more severe. With manufacturers paying materially higher prices for both cotton and wool than a year ago, all are entitled to better prices for finished products than at present prevail. The blanket and sheeting mills of the country will probably distribute as many goods as in 1927 but evidently on a much less favorable basis.

A NEW YEAR'S MESSAGE

for

American Merchants and Textile Manufacturers

FOR many years American manufacturers have been importing from Europe a textile fibre unlike anything that was being made in America. This yarn, sold under the brand name of Bemberg, has been successfully used by leading European manufacturers for many years, for the creation of fine hosiery and underwear and of dress and other fabrics of unusual beauty of texture.

So long as American manufacturers had to import Bemberg yarns, the supply was somewhat uncertain. Now, however, the first unit of the American Bemberg plant, located in Tennessee, has been in production for over a year. A second unit will be placed in operation in 1928. Additional units are definitely arranged for, which will give Bemberg a leading place in the textile industry of America.

Any comparison of other fibres with Bemberg is difficult because Bemberg's characteristic qualities have enabled it to fill a need in the textile industry not met by any other fibre.

The manufacturers who sense the constantly increasing demand from the better merchants and the consumer, for fabrics of quality and style appeal, will appreciate the softness, the gossamer fineness, the exquisite texture of Bemberg fabrics.

Due to the special process under which Bemberg is made, the finished fabrics have softness and beauty combined with marked strength and wearability. This durability is further enhanced because of the unusual strength of Bemberg in the wet state, and because it does not deteriorate with heat or perspiration. Bemberg fabrics can be washed and ironed under exactly the same conditions as silk.

Just as the characteristic beauty of silk fabrics is due to the wondrous care with which the silk worm delicately spins its fibre, so the intrinsic beauty of Bemberg fabrics is due to a special stretch spinning process used exclusively in the making of Bemberg. This gives each gossamer filament the *inner-structure* of natural silk. Moreover, unlike other textile fibres, in each denier of Bemberg there are *the same number of filaments as in natural silk*. One can readily understand why fabrics of Bemberg have such unusual softness, draping qualities and strength.

Bemberg offers unlimited possibilities to all manufacturers of quality fabrics and knit goods. A competent staff of technical advisors is at the service of any manufacturer to assist in obtaining the best possible results when working with Bemberg.

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Outlook for Rayon Consumption

THE following symposium represents the views of the individual market editors of TEXTILE WORLD regarding the outlook for rayon consumption in their respective branches of the industry:

* * *

COTTON GOODS

The increasing interest of the cotton goods field in the use of rayon has been one of the dominating factors in rejuvenating an uncertain rayon producing industry during the last year. The growing realization among cotton goods men that style is the greatest problem in merchandising fancy cottons has led them to extensive use of rayon in developing new ideas. The possibilities of this man-made fibre are manifold, not only because of the brilliant effects that may be obtained, but also due to the flexibility of the product in following style changes as that affects color, pattern, weave and texture.

During the last year much has been accomplished by cotton goods men in overcoming consumer prejudices regarding rayon. This feat was achieved by producing a more serviceable fabric due to efficient manufacturing methods as well as by increased efforts in styling new lines to be readily acceptable to the critical eye of the retail market. Better mill knowledge in working rayon into a more durable cloth was probably the largest factor in establishing cotton rayon mixtures in their rightful place among the leading fabrics.

With many of the obstacles being removed that previously retarded the establishing of rayon in a fixed place in the cotton goods industry, there is every reason to believe that this section of the textile field will consume more rayon during 1928 than it has during similar periods in the past.

Rayon-filled materials are gaining considerable prestige among drapery distributors as consumer interest grows in favor of its highly decorative and serviceable value. New lines showing heavy brocaded effects for formal hangings as well as lighter transparent curtain materials are receiving hearty commendation from consumers all over the country. Colored bedspreads have supplanted the former plain white coverings and rayon fabrics with their rich lustrous sheen have imbedded themselves solidly in this field. Upholstery lines are also tending more strongly to the use of rayon but not to the extent noticed in the previously mentioned fields. Lack of confidence in the wearing qualities of rayons has made the progress of this fiber slow in upholstery developments.

Rayon alpacas in plain weaves or two-tone effects are making large inroads on the dress goods departments of most organizations handling this class of goods. A broad field is open for the ultimate consumption of this fabric when converted into dresses and work smocks for women.

Notable examples of the employment of rayon for striping effects are wide spread in fancy shirtings and decorated fancy cotton dress goods. Rayon striped shirtings in conservative and brilliant shades varying in arrangement and size on white grounds are receiving great popularity. Rayon filled jacquard broadcloths for shirtings are also experiencing a good demand in white and colors. Patterns are large and use is made of geometric designs.

All-rayon fabrics such as voiles and chiffons appearing in wide varieties of solid color and printed effects are increasing in importance. Rayon linings of serge or sateen are in the process of development for use in the men's clothing field. These linings have already found some favor in topcoats but due to style and suspicion as to wearing qualities, there is much work to be done before it can be truthfully said that rayons have found a place for themselves among other lining materials.

That rayon will continue to expand in consumption throughout the cotton goods field during the coming year is generally conceded by all those in close touch with the situation.

* * *

SILK GOODS

At the beginning of 1927 the prediction was made that any real gains experienced by rayon in the silk field would be made by the special types of yarn, notably the acetate and the cuprammonium, rather than by the viscose yarns. Actual results have well borne out this prediction. The viscose yarns have gained slightly in actual volume but have lost relatively. In view of the striking increases made by viscose rayon in other fields, aided by the price cuts at the end of 1926, progress during 1927 was negligible.

In the case of acetate and cuprammonium yarns, considerable progress has been made. In the case of the former particularly great strides have been made in acquainting the silk manufacturer as well as the cotton trade with the advantages of branded yarn such as Celanese. The limited quantities available in the case of Celanese were both an aid and a handicap at the same time. It aided matters by preventing large quantities of competitive goods bringing down prices but at the same time the smaller quantities available reduced the output in desirable and readily saleable articles.

By means of advertising and missionary work all during 1927, the special yarns have been brought to the attention of manufacturers. The most difficult part is now completed and it should bear fruit during the coming year. Celanese voiles and rayon voiles also have done well during the year. They should sell in even greater volume in 1928. The outlook is for an increasing sale of special types of yarn in 1928 with viscose also noting a gain. Increasing knowledge on the part, not only of manufacturers, but of silk throwsters, who are going in for rayon more and more, should be a decided aid.

* * *

WOOL GOODS

During 1927 rayon made scant gains if any in the field of men's wear and dress goods. In the former it was used a little more than during previous years for decorations, while in the latter field it was used as an inherent part of a number of new fabrics which promised well, but, perhaps because of the dullness of the entire women's wear demand for wool goods, no pronounced success was recorded. In linings the use of rayon has been gaining and promises great things in the future if the fabrics give suitable durability.

Rayon was used sparingly in the men's wear field at first, and several years ago appeared only in some of the cheaper tropicals where it displaced mercerized cotton which had been used to lend life to otherwise featureless goods. From this small beginning the use of rayon for decoration spread until last August when the men's wear samples were shown for the spring, 1928, season it was stated that the majority of the lines at $2.50 per yard and less which used decorations at all, used rayon for that purpose. So long as the fiber is used merely as a decoration, no great poundage consumption is to be expected and feeling exists in the men's wear field that rayon is unlikely to spread beyond the degree of use registered this season.

In the women's wear trade numerous lines of rayon warp or rayon filling, or of yarns of rayon and worsted twist were shown through the year. Most of these fabrics were finished in a semi-lustrous effect, and for the present at least there seems little incentive to use rayon for brilliant or lustrous fabrics in this field. One of the exceptions to this statement is the use of rayon in the face of certain of the pile sheen coatings, but this is usually rayon waste or a spun rayon-wool mixture, rather than the denier rayon.

Owing to the fact that the wool mill-products which sold best through the year to the women's garment trade were broadcloths, flannels, fancy woolen coatings, and some varieties of very sheer goods, the lines using rayon to advantage did not have much of an opportunity. However, such lines as those of the kasha family, some fancy versions of twills and crepes, and even tweeds are being offered with rayon mixtures, and prospect for more active selling is good.

Style authorities believe that the women's wear trade is moving on to a very fancy season. With such a prospect it is more than likely that rayon admixtures will make goods desirable and a small expansion may be witnessed in 1928.

However, all in all, the wool goods field is a small one for rayon. Taking the percentages named by leading companies in analyzing their distribution of rayon through the year by industries, it is improbable than more than 800,000 lbs. were used in the wool goods field.

Several fabric manufacturers have gone deeply into the matter of rayon lining fabrics and unusually complete assortments are being shown. The goods are offered in rayon warp, or rayon filling, or rayon both ways, and the weaves are plain, twill, serge and fancy. Merchants behind these lines are optimistic as to their acceptance. Though distribution may start slowly, as the prejudice still existing among the users of linings is broken down, it is hoped that the new lines will come to have a definite and important place in the lining field.

The rayon fiber offers an easy path to neat and inexpensive effects when carded with wool, as the piece dye process may be used and mixture effects produced for the reason that rayon is unaffected by the wool dye and vice versa. Development of these mixtures, however, must wait upon a vogue which will make them popular. In the meantime newly adapted vegetable fibers are being promoted in the wool goods field which produce similar effects and are said to work up better with wool than does rayon waste. The relative importance of these various items remain to be set during the coming season. However at the outset of that season it may be said that there is no prospect of any sharp or quick change. There will doubtless remain a year-in and year-out use of rayon in wool goods, and it will probably average about as in 1927 until some definite style change, not yet visible, comes on the scene to upset the present balance.

* * *

KNIT GOODS

Underwear:—The consumption of rayon in the kint underwear field in 1927 shows the largest increase of any textile division. Estimates in another part of this issue by two of the largest factors in the rayon world indicate that the percentage consumed by the underwear trade ranges from 28 to 37 percent, or an increase in one case of 4% and in another 9%. This is the largest increase in any field in which rayon enters, the next being cotton goods, which according to one report shows a falling off, although the estimate of the other producer indicates a 3% gain.

This development is the result of larger use of the synthetic fiber in the production of women's garments. While the year has had its difficulties and there is evidence of a certain amount of over-production on the part of new manufacturers as well as losses by those who have not paid sufficient attention to the proper construction of fabrics or of garments, many others have prospered decidedly and their business has increased largely.

The outstanding feature which is reported by handlers of ladies' rayon goods and garments is the apparent demand for more durable fabrics. When the movement first began to

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RAYON GLANZSTOFF YARN

take on sizable proportions in ladies underwear a good deal of skepticism was heard regarding the continuance of the business. It was argued that the inferior quality and the lack of durability so apparent spelled the doom of this character of fabric. With improvements and the use of finer deniers, this objection has been overcome by reputable manufacturers who find that their trade are receiving less and less returns on account of inferior garments and unsatisfactory wear by the consumer. Although the cost of producing merchandise that will last may be somewhat higher than for inferior goods, the resulting satisfaction and return business more than compensate.

The price situation on garments has been largely stabilized by the lack of irregularity in rayon yarns. The market throughout the year has been on a steady basis, with little opportunity of trading at reduction. While this has not meant an opportunity to secure higher prices on the finished product and margins have not been materially enlarged, it has given the manufacturer a basis for operating more understandingly and with increased clarity of vision regarding the future. Distribution of rayon garments continues largely with the retail trade, due for the most part to the unwillingness of the wholesaler to carry stocks of this merchandise. It is probable that a certain amount of increased interest has been witnessed by the farseeing wholesaler in business done by his customer who has bought the merchandise from the mill representative. On the other hand, the retailer has been willing to anticipate his requirements to a greater extent during the year, feeling he had little to fear on the score of depreciation. As a consequence he has become more firmly entrenched in his relations with the producer and the possibility of the dry goods jobber becoming an important factor in the distribution of rayon underwear gives little evidence of improvement.

During the latter half of 1927 a much more hopeful feeling was expressed as to the possibilities of men's rayon garments. This applies not only to union suits but also to shirts and drawers. Particularly in the latter has the vogue of the pull-over shirt in combination with track pants come to be recognized, especially with college boys and for athletic sports. In the shirt of this character it has been developed that rayon garments are not only feasible but practical. A good deal has been said about the unlikelihood of men's rayon underwear becoming generally accepted, because of the hard usage given to it in the laundry. Also a factor which has militated against its general acceptance has been the matter of expense, confining it largely to the ultra trade. With increased instructions as to how these fabrics should be treated by the laundry and with a cheapening of the cost of production, especially in the pull-over shirt, this type of garment has entered into a more popular field with resulting increases in sales. It is also noted that a larger number of union suit lines are being shown and very few selling agents indicate that they are having any material trouble with the garments which they sell to their trade. Returns are practically negligible and satisfaction is generally expressed. It is not felt, however, that the rayon union suit is going to be a prominent feature of the knit goods trade at least for some time to come.

Hosiery:—The record of the year, were it possible to secure complete figures, would doubtless show a falling off in the consumption of rayon by hosiery manufacturers. This is true in spite of the fact that probably the number of dozens of hose into which rayon entered was as large as during the preceding year, but the aggregate amount of yarn bought for hosiery manufacture was less because of the technical changes. Considerably more plating of cotton by rayon was done as against the mixture of threads of cotton and rayon as in the past. It is intimated, however, that the cheapening of hosiery, especially the full fashioned variety, to meet a price demand will increase the volume of the fiber in the years to come. With this development it is expected hosiery made of cotton and rayon in equal quantities or with a percentage of two threads of rayon to one of cotton will be noted as a development.

Export business shows somewhat of a decline as compared with 1926. This is thought to be due in large measure to the increased call for all-silk hosiery by foreign countries where improvement in financial conditions makes such a demand logical. Whether the tendency toward the cheaper class of merchandise destined for export makes it likely to be seen again, few are willing to prophesy, but certainly at the moment the outlook is not in this direction.

Rayon Institute's Activities

(*Continued from page 263*)

In addition the Institute should serve as a clearing house through which fabric manufacturers may learn the reactions of consumers to rayon products. The importance of this can be appreciated better today than it could have been a decade ago since the industry has come to a new realization of the need for producing what the buyer at the counter wants rather than what the manufacturer thinks he or she wants.

Finally it should be noted that the rayon industry has started its cooperative effort when it is still comparatively young in years and before it has accumulated a variety of traditional weaknesses such as have handicapped the other divisions of the textile field. This is a particularly encouraging feature and one which should play a prominent part in assuring the successful development of the work of the new organization.

Members of Institute

The producers who are members of the Institute and are financing and promoting its activities include the following firms: The Viscose Co., DuPont Rayon Co., Industrial Rayon Corp., and Belamose Corp. Offices of the Institute are located at 250 Fifth Avenue, New York. E. L. Starr, who has had wide experience in both textile and advertising fields, is the director. Miss Emma L. Fetta, who for ten years has been active in editorial work both in this country and abroad, is public relations counsel for the Institute. The advertising will be handled by Frank Seaman, Inc., of 470 Fourth Ave., New York. It is understood that approximately $500,000 will be expended in the initial campaign to cover approximately six months.

Effect of Fine Filaments

(*Continued from page 148*)

sions on the yarns as they were used on the machine. It might be well to mention at this time that the testing laboratory is equipped for using both testing apparatus and winding and knitting machinery; but, before reports of this kind are made, the same test is run in the knitting department under the average mill conditions. In other words these tests are not made under any conditions which are not practical and which may not be obtained in any ordinary knitting mill.

Woking on a moisture-regain basis, the atmospheric conditions previously determined were set so that with each kind of yarn shown in the photographs the moisture regain would be approximately 9%, the relative humidity, of course, being varied according to the ability of each yarn to pick up the moisture. The results showed that the comparative covering values of the various yarns was as indicated under the microscope and could be controlled with difficulty by using a heavy tension on the rayon yarns.

With Additional Moisture

The second test was made by changing the air conditions until each yarn contained approximately 12% moisture regain. With the added amount of moisture, the yarn becomes more pliable, thus increasing its covering qualities. Under these conditions the tension on the yarns was reduced considerably without preventing the desired plating effect being obtained.

By carrying the test still further, the moisture regain was raised to approximately 15%. Under these conditions the tension on the yarns was reduced until it consisted of only a drag on the yarn enough to steady it when going into the needles. One yarn apparently plated as well as any of the others, tensions were reduced to a minimum, and the fabric was free from broken filaments.

The yarns used in these tests were all 150-denier, bleached, and were plated on single 60s mercerized cotton.

Mills Must Study Markets

By Philip S. Tuley

President and Treasurer, Louisville, (Ky.) Cotton Mills Co.

In looking into 1928 it behooves all manufacturers of textiles and especially of cotton goods and of yarn to study the markets for these commodities most carefully and to adapt operations to the absorption of current production so as to avoid building up a surplus of finished product in excess of current consumption.

Prices for cotton yarns, in which, of course, we are primarily interested, are unremunerative and discouraging. The Cotton-Textile Institute, through the Carded Yarn Group, has made available to our industry statistics which, intelligently interpreted, cannot fail to make for better conditions in cotton yarns during the year. Spinners will have themselves to blame if they operate their plants upon yarns which are not entering consumption but are being stored as an added burden for the industry to carry. Sacrificing prices weakens the determination not to sell at a loss and puts into the yarn buyers' hands a bludgeon which they cannot be blamed for using upon the unwise spinner.

Notwithstanding the fact that this is a presidential year, we incline to feel that this circumstance is not likely to have a dampening effect upon business. The danger seems to lie in undue speculation and if this is restricted as it should be and kept within reasonable limits, no prejudicial reaction against business in general should result.

It is difficult to determine, with any degree of definiteness, the occasion for the present depressed state of trade in cotton yarns. Competition of rayon, changes in demand arising from changes in fashion affecting the markets for apparel and for draperies and other decorative fabrics, have, of course, had their influence. More intelligent marketing practices, at the suggestion of The Cotton-Textile Institute, and the improved practices already established in the trade through its activities, cannot fail to make for more stable conditions.

Prosperity in the cotton yarn industry would seem, therefore, largely to lie in the hands of the spinners themselves, and if they fit their operations to demand and consumption, are firm in their determination not to sell at less than replacement cost, and adopt policies of distribution stripped of the evils of the past, it would seem to us that 1928 will hold for us yarn spinners our share of reasonable prosperity.

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Underwear Volume for 1927 Satisfactory But Profits Have Dwindled

Development of Southern Competition Feature of the Year in Heavy-Weights

KNIT underwear has been no exception to the general rule of restricted profits during 1927. Manufacturers have found it impossible to run their plants to capacity and curtailment has advanced the cost of production. Buying, throughout the year, has been of a hand-to-mouth character, although it is probable that the total for the twelve months compares very favorably with past seasons. The buyer has had little incentive to operate ahead to any extent, because he has not been assured of the maintenance of prices. In this respect, however, he has had little cause for disappointment and has suffered comparatively little depreciation on the purchases he has made. It would seem as though conditions justified more liberal anticipation of requirements than has been the case, for the tendency, almost throughout the year, has been upward, with comparatively few exceptions. Nevertheless, the drygoods distributor has become so firmly entrenched in the policy of buying only as he needs merchandise, that even an upward market, with every evidence of stability, has failed to dislodge him.

Southern Competition Important

The growing importance of the Southerner in the knit underwear field has been fully realized during the past year. The size and excellence of plants in this section of the country, together with the aggressiveness shown by these manufacturers, have placed than in an important position, with reference to the production of cotton underwear. Their movements have been eagerly watched and followed, for the most part, by producers in other sections of the country and, in fact, they have been the yardstick by which the trade, as a whole, have measured their ability to ask profitable prices.

The growing importance of cotton-ribbed underwear for men has been emphasized, not alone by the procedure of these leading Southerners, but has been distinctly proven by the increased number of manufacturers who have entered this field. The falling off of demand for fleeced underwear has induced prominent factors in this field to divert their product to cotton-ribbed underwear, with the result that today, it is estimated the production of the latter grade of merchandise is perhaps greater than the capacity of the country to absorb it. It has certainly resulted in more intense competition, and in prices that must mean a restriction of profit to those engaged in this manufacture. This fact is evident in the current irregularity on prices for Fall, 1928, resulting in reductions after opening quotations were announced. It would seem as though this slashing of prices would mean unfavorable results to all in this class of underwear.

Early Openings for 1927

As was the case at the end of last year, so in December, 1926, leading Southern lines were opened against the better judgment of competitors for the purpose of establishing a basis on which these important manufacturers could operate their plants. In 1926, this decision proved beneficial to those who made it, for early business was secured of sufficient volume to justify the early opening. It does not seem as though as much could be said of the same practice for 1927-28. The decision to open heavy-weight ribs in December of last year was, undoubtedly, for the same reason; namely, for the purpose of securing sufficient business on which plants could be operated during an otherwise dull period. But, apparently, buyers could not be persuaded to perform their part of the program and early advance business has, according to report, been most unsatisfactory. The early openings, also, have given the buyer an opportunity to exert pressure upon the market, with the result that prices have been reduced, and the market is irregular.

Three Delivery Periods Established

One of the most important developments in connection with the merchandising of Southern heavy-weight ribs was the establishment last year of three periods involving different price levels, on which merchandise was sold. Naturally, it is the effort of manufacturers to sell as large a volume as possible for early delivery, and this was undoubtedly possible during the early months of 1927. Of course, this method of operation on the part of the buyer is more or less confined to the larger houses, who are able to take in their merchandise for the first delivery, and secure the advantage of lower prices and discounts. It meant, however, that the manufacturer did not secure the benefit of advanced prices, which were made on second and third deliveries, for it is understood that a comparatively small proportion of the mills products were sold for these deliveries, or at least, if not so sold first delivery prices were obtained. Another reason for believing that advances made during the middle of the year were not of advantage to the producer, is the fact that merchandise was offered, during the last two or three months, for delivery, at the opening prices of 1927-28. Inasmuch as these goods were sold at value, and the next season levels guaranteed, it would seem to be evident that the recent reductions were obtained by buyers on all purchases made since the guarantee was offered.

Since price levels on cotton and yarn show an increase ranging from five to eight cents a pound today, over those ruling at the beginning of the year, the new levels of underwear prices do not seem to be commensurate. This is especially true when the reductions from the opening are taken into consideration. These reductions range from 12½ to 25c, according to the weights of garments. The buyer contends the adjustment has not been sufficiently radical to make it an incentive for him to buy and while his contention that a further reduction will be witnessed may have little foundation, the temper of the trade is certainly not favorable to large buying, on this class of goods.

Statistical Position Fair

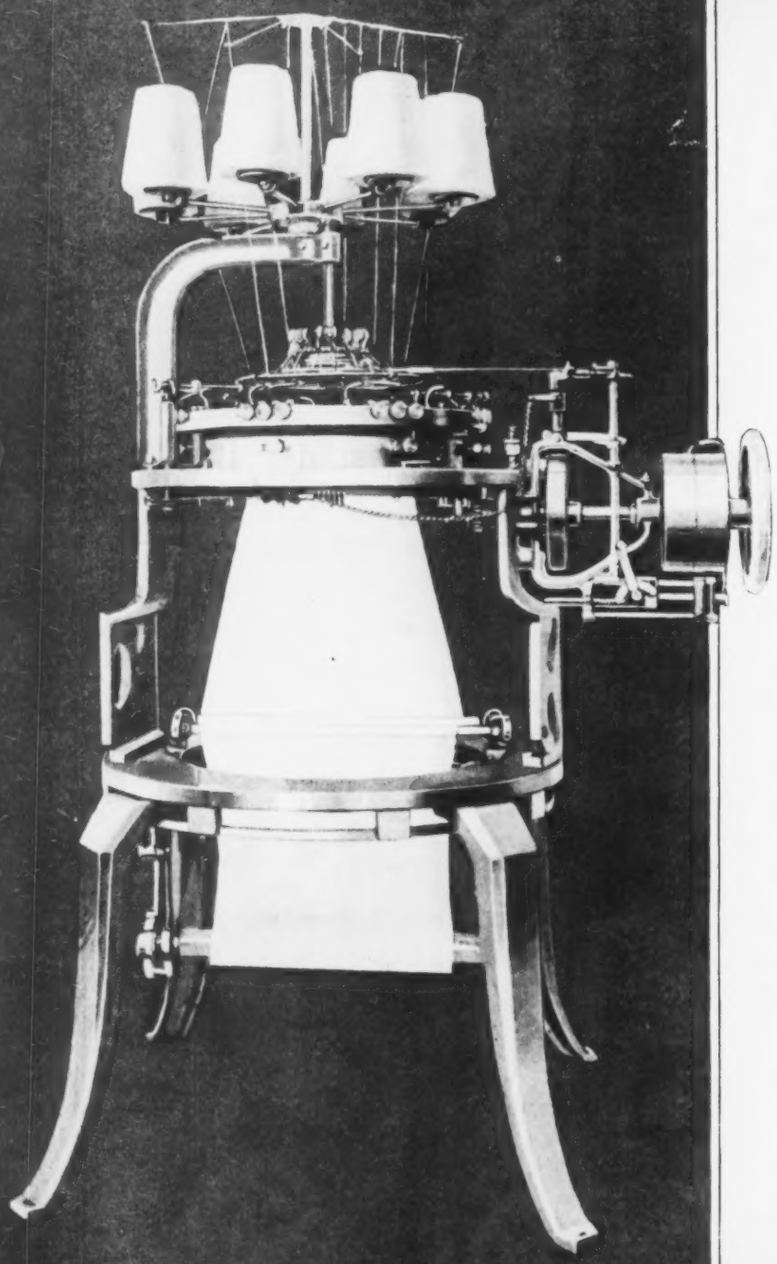
Reports received from salesmen who have visited various sections of the country on new lines of underwear indicate that stocks in distributors' hands are not burdensome. The carry-over, in the majority of cases, has been small, in spite of unfavorable climatic conditions. It is true there are exceptions to this rule, and these exceptions are more in evidence the closer one gets to the Atlantic seaboard, but on the average jobbers are in a position where, if they had full confidence in the stability of the market for the current year, they could operate without reference to a supply on hand. In certain quarters, in the Northwest especially, the exception to this rule is to be found in the status of fleeced underwear. Localities which have been large consumers, in the past, of this type of goods, are apparently changing their mode of operations decidedly. This is not believed to mean that fleeces are to be eliminated entirely from consideration, but certainly, according to all reports, they are not likely to occupy the important place they have in the past. Export demand for fleeces has been declining for a number of years and there seems little hope of a revival of foreign trade. It is true that the production of fleeces has likewise declined, but whether it has been of sufficient scope to offset the reduced demand, remains to be seen. The export of cotton underwear for the eleven months, ended November, 1927, amounted to 613,000 dozen, valued at $2,335,600, as compared with the same period in 1926 of 746,857 dozen, valued at $3,035,368. It should be noted that the decline in values is greater than in the number of dozens, but it is probable that fleeced underwear is the most important item in this shrinkage.

Wool Underwear Outlook Bright

Considering the reduced number of manufacturers of wool underwear in the country, the volume of business during 1927 has been comparatively satisfactory. In certain instances manufacturers have been unable to keep up with the requests for deliveries, in spite of the fact that they have run their mills to capacity. It is true this does not apply to every producer, but in the case of those who have not secured a favorable volume of business, it is believed the character of their product is to blame. Those who have maintained an excellence of garments and who have secured a reputation for such excellence, have been able to sell their products with comparative freedom, to say nothing of the profits secured. In all cases, the latter have not been up to expectation, largely on account of increasing costs of raw material and the inability to revise prices of finished garments in like proportion.

It has been a surprising fact that during 1927 the tendency in this class of underwear has been toward greater demand for shirts and drawers as compared with union suits. It would seem as though the average consumer had come to appreciate that the union suit is not the most economical garment he can buy and wear. Whether this means a permanent continuance of demand for shirts and drawers, it is difficult to forecast, but at any rate the trend is in this direction at present and may continue to develop. The statistical position here is also favorable. Carryovers were not large at the end of 1927, and the majority of buyers, especially in the Northwest, predict a favorable season this year. Lines which have been shown have been for the most part practically on last year's level of price, notwithstanding the fact that cost of manufacture is higher.

Also, strange to say, there have been certain irregularities in the price situation since the opening of 1928 lines. This is especially true on the cheaper grades and have resulted in the meeting of reductions in individual instances by the general run of manufacturers. In certain reported cases, these low prices mean an actual loss and it remains to be seen how long they can be continued. It is significant that the reductions apply only to original orders and buyers have been



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given to understand that duplicates will not be filled at these levels. It is felt this attitude on the part of manufacturers has had the effect of increasing, to an extent, at least, the original purchases of the wholesaler. It cannot be said, however, that early business has been of such volume as to guarantee the full operation of plants, for buyers are just as conservative in this line as in other textile divisions and will not operate for their season's requirements. Nevertheless, the outlook is far from discouraging and developments should be satisfactory, at least so far as volume is concerned.

Increase in Balbriggans

In the balbriggan field curtailment of production has been an important factor. As compared with a few years ago, the total output of this class of underwear is decidedly restricted. This fact has led to the feeling in certain quarters that a permanent increase in demand for this type of garment was in the air. It is probable that the total production for 1927 has not equalled that of past years, when many more plants were engaged in this manufacture. The purchases of balbriggans during the year have made it possible for existing plants to clean up any supply which may have been carried over and it is felt that with the duplicates which may be expected within the next few months, a fairly satisfactory run may be obtained by the average manufacturer. The advance in prices, made necessary by increased cost of cotton and yarn, put rather a damper on the continuance of free purchasing. In fact, the increases which were felt necessary practically put balbriggans out of the running during the middle of the year. It remains to be seen whether the warrant for these prices can be maintained and whether the buyer will continue to operate on the current basis.

Influence of Rayon

The development of rayon underwear during 1927 has unquestionably had its influence on other types of garments. This is particularly true in women's styles, where rayon has interfered not only with cotton, but also with silk, to a material degree. Better methods of manufacture, more intelligent use of the fibre, and improved merchandising have all contributed toward the success of rayon garments for women's wear. The development in the men's field has not been as radical. It is not generally believed that men's rayon union suits are ever to occupy a very important economic position. But on the other hand, the development of the pull-over shirt in cotton knitted fabric has seen its counterpart in rayon garments. These are improving in request daily and many forecast a decided boom for this class of garment. The question of laundering is an important problem in rayon underwear, especially so far as men's garments are concerned, but improvements in methods are taking place and it is expected that less difficulties will be encountered in the future.

The chain store is an increasing consumer of underwear and the profitable volume of business which this class of buyer affords the distributor warrants the attention which is being paid to this class of trade. While manufacturers realize the necessity of the jobber, provided he functions properly in the distribution of their product, the trouble has been that the majority of wholesalers have been unwilling to take the risks involved in the carrying of merchandise and have not given proper service to the retail trade to develop the ultimate distribution of this class of goods. New methods of increasing jobbers' trade have been devised in certain cases, while the volume of business done direct with the retailer is likewise developing. The possibilities of the future along old lines of merchandising seem less favorable as time goes on. New plans, it is believed, must be formulated in order to maintain the proper balance between wholesale and retail distribution and to enable the manufacturer to operate his plant on a profitable basis with assurance of continued demand.

A Spotty Year in Hosiery with Outlook Considered Fair by Majority

The Fancy Still Strong Favorite While the Leading Full Fashioned Lines Remain Active

IT is difficult to make any general statement regarding conditions in the hosiery industry during 1927 which would comprehend all of the conditions which have surrounded the business and at the same time reflect any universal trend. It might be said that in very many instances the history of the year was a satisfactory one, that the volume of business compared favorably with previous years and that profits were of a substantial character. Such a statement would not reflect conditions in other parts of the market, however, where a restricted business was done and where profits were reduced most decidedly. In other words, the situation has been spotty and the net result, speaking for the industry as a whole, has been only average.

Influence of the Fancy

Hosiery buyers have based their operations for the most part on the methods pursued in the purchase of fancy hosiery. Here the demand has been individually small but more or less constant. While such a course is the only logical one on fancy effects, yet even here it is felt that the wholesaler has gone to extremes and has demanded new styles and patterns more frequently than the necessities of the occasion would warrant. Undoubtedly this character of buying has had its psychological influence upon the operator in connection with his purchases of all lines of hosiery. The consequence has been that there has been delay and unwillingness to anticipate in almost all divisions of the market. This has not been conducive to a positive basis on which to operate plants, for the manufacturer has not had sufficient ground work to form any correct estimate of what the future had in store for him. He has been obliged to run his mill on a hand-to-mouth basis, hoping that a sufficient business would be continued to enable him to keep his machinery in constant operation. The majority have found it possible to run fairly well and though some dissatisfaction with regard to the margin of profits has been heard and has its justification, yet by and large it is felt the industry has suffered considerably less than certain other divisions of the textile trade.

Difficult Raw Material Basis

Besides the difficulties which the hosiery manufacturer confronted in connection with buyers' operations, he has also had to face a perplexing situation on his raw material. The wide variations in cotton which advanced from a level lower by 7 or 8 cents than that existing today to a point which made it necessary to advance the price of his product only to experience decided weakness toward the end of the year had its influence upon the stability of the market for finished goods. The raw silk market pursued exactly the opposite course. Persistent declines brought the level of this raw material down to a point as low as any touched since the war. Every purchase by manufacturers was regretted because by delay a more favorable figure could have been secured. It is the belief of many that the corner has been turned in this material and that the prospect is for a stronger market during 1928. At least it is the consensus of opinion that the situation will be more stabilized and there will not be the necessity of figuring on the irregularities which have been such a feature of the 1927 business. With respect to rayon the hosiery knitter has had comparatively little to worry him. As predicted at the beginning of 1927, the market became stabilized and the irregularities which featured 1926 were eliminated almost completely. The slight changes which have occurred have been in an upward direction and it has been a comparatively easy market on which to operate.

Fancies Still in the Saddle

In spite of the prophecies made at the opening of 1927 regarding a decline in demand for fancy hosiery and an expected trend toward staples, the history of the year developed a persistent request for merchandise of this character and toward the end of the year there seemed evidence of increasing popularity of this type. Of course the largest field for fancies is in men's half hose. It cannot be said that any startling changes either in styles or in demand have been noted. It was predicted a tendency toward more conservative patterns and colorings would be witnessed and that the buyer would eliminate much of the outlandish merchandise he formerly bought and distributed. While in certain quarters this has been true, yet on the whole, startling effects, light colors and stripes, as well as jacquard effects, have been taken. The prophecy that a tendency toward clocks foretold a return to staple merchandise has not been fulfilled. Although high class haberdashers have shown goods of this character in foreign made

HOSIERY EXPORTS FOR 11 MONTHS ENDED NOVEMBER

	1927		1926	
	Dozen Pairs	*Value*	*Dozen Pairs*	*Value*
Cotton hosiery	4,033,647	$6,791,869	4,406,322	$7,846,994
Silk hosiery	722,643	7,461,934	899,371	8,405,498
Rayon hosiery	1,073,217	3,612,997	1,153,470	4,355,379
Total	5,829,507	$17,866,800	6,459,163	$20,607,871

HOSIERY IMPORTS FOR 11 MONTHS ENDED NOVEMBER

	1927		1926	
	Dozen Pairs	*Value*	*Dozen Pairs*	*Value*
Cotton hosiery	463,444	$1,619,912	456,729	$1,491,062
Wool hosiery	364,395	2,396,429	358,015	2,549,405
Total	827,839	$4,016,341	814,744	$4,040,467
Excess of exports over imports	5,001,668	$13,850,459	5,644,419	$16,567,404

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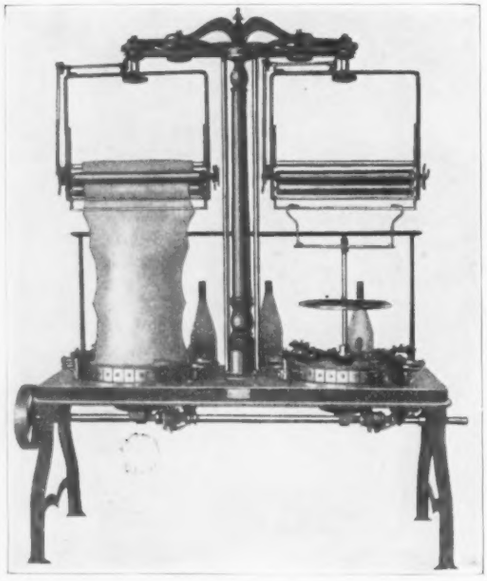

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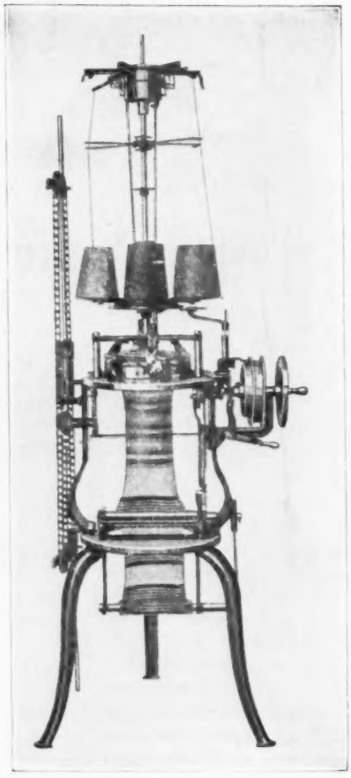

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hosiery, the demand has not extended to the domestic product and little evidence is to be found that the current year will see any marked trend in this direction. The well known difficulties attending the manufacture of fancies and the possibilities of decided loss, have not encouraged any new entrants into this field. This does not mean there is no over-production on this type of goods, for here as well as in other lines of knit goods this feature has been a factor in keeping down prices.

In isolated cases a very satisfactory business has been reported on ladies' fancies, particularly in wool and rayon. Very attractive lines of this construction were shown early in the year and the movement, as far as the wholesale distributor is concerned, was encouraging. Retail trade last fall was not so encouraging on account of the warm weather. While stocks are not on the average large as the year opens, yet in certain instances they will undoubtedly interfere with free operations for next fall. Lines of this character have been shown during the last few weeks, but buyers who have been in the market have not exhibited any particular interest and it is too early to prophesy much regarding the development this year. A good deal can be said with regard to the possibility of this development, especially in western markets. Comparatively few goods of this character are seen in the East or in Metropolitan centers, but in country districts their consumption is said to be on the increase and with a fair break with respect to whether the success of these lines would seem to be assured. Considerable rayon is used in this class of merchandise and also in half hose in mixture with wool.

Seamless Hosiery Has Difficulties

The increased production of full fashioned hosiery has not made it possible for the seamless manufacturer to secure the volume of business he had expected during the year. The efforts of this class of manufacturer to increase his demand by the introduction of the fancy heel accounted for a temporary spurt which has not had the lasting powers expected. The result is that at the end of the year this division of the market was more or less weak as far as prices were concerned and of late there have been reports of reductions. It is true that the general run of manufacturers are not showing weakness but here and there a case is cited where a manufacturer has made an adjustment of 10 or 15c a dozen. It may be argued that these goods were too high before price cuts were made, but the evidence of irregularity has been more or less disturbing, not only to competitors, but also to the buyer. This may make for increased conservatism on the latter's part during the current year and the results to the producer may not be as satisfactory. The weakness above mentioned seems to be confined in large part to mixtures of silk and rayon, for all-silk goods seem to have become more or less stabilized as the result of increasing strength of raw material. If the predictions regarding the upward trend of raw silk are proven to be correct, it would seem as though the likelihood of low prices in this quarter is not very great and that buyers who have undoubtedly shown a greater inclination to bear the market on seamless hosiery than on almost any other class, are not going to be successful in their operations.

Infants' Hosiery Still Problematic

The year 1927 was not a very satisfactory one for producers of infants' hosiery. Intense competition and over-production made for profits of a minimum character. One of the principal difficulties which manufacturers experienced last year was the inability to get details of orders. Blanket business does not run the mill, especially on goods of this character where so many varieties of products are involved. The buyer found before last season was over that his delay was expensive. He was obliged to accept substitutes on many lines and deliveries were decidedly disappointing from his standpoint. He seems to have learned very little as a result of this experience and with the opening of lines for 1928 is pursuing the same dilatory practice that characterized his operations last year. The manufacturer of infants' hosiery has learned that it is not good policy to accumulate stock and therefore the buyer may find similar conditions to those which developed in the summer of 1927. The wholesaler declares it is impossible for him to buy in advance on this class of merchandise because of the uncertainty as to styles which will be popular, but it would seem as though his operations could be adjusted more closely to the period of consumption than they have been of late. There is no doubt that the regular dry goods wholesaler is having decided competition from the chain stores, especially the 5 and 10c variety, on this class of product. The volume of business done by the mill with this class of distributor has increased remarkably within the last few years and it is only natural every consideration should be given to it. At the same time there would seem to be little justification in making more favorable prices to the chain store than to the regular jobber, and this it is declared has been done. The result is that the jobber cannot sell his goods to the retailer at a price which will enable the latter to meet the attractive figures offered by his next door neighbor who is part of a chain store system. These difficulties and the handicaps which they have imposed upon the manufacturer have led to attempted cooperation to rectify some of the abuses existing. Whether this cooperation will be successful or not in eliminating the chaotic conditions in this branch remains to be seen. It is certain they cannot be much worse or it will be necessary for important mills to discontinue the manufacture of this class of goods.

Full Fashioned in Demand

Despite all of the predictions that increased production would bring about an intensity of competition in full fashioned hosiery that would be disastrous to the success of those engaged therein, the market continues in fair shape. The year undoubtedly has seen some restriction in profits but in spite of a constant decline in raw material prices, it has been possible in a large measure to maintain the level on manufactured merchandise. It is true that the full effect of the new units which have been developed on this class of goods has not been as yet completely demonstrated. Not all of these plants have as yet been put in operation and others are not in full production. And yet the larger factors in the trade have managed to distribute their output with a decided degree of success, and as the new year opens the advance business which has been taken in certain directions would seem to assure the continued operation of these plants. Of late certain manufacturers going to the retail trade have reduced their prices somewhat, but this has not been the case with those catering to the jobber, where quotations have been fully maintained, with little likelihood of a change, at least in the near future.

Development of Pointed Heel

The pointed heel, which at the time of its introduction was regarded as merely a temporary fad that would soon pass out, has exhibited remarkable staying powers. Today it is regarded as practically staple, and its continuance more or less indefinite. The settlement of important litigation on the subject of the pointed heel through arbitration has resulted in the request of certain important manufacturers to make this feature on their hosiery. This in itself is an indication that these manufacturers believe in the stability of this feature and wish to be identified as makers of the improved heel. There have been all sorts of heels made to compete with the original pointed heel—some of them have been very crude and unsightly, others have more nearly approximated the success of the original, but as time goes on it would seem that the popularity of the heel as first constructed is assured and that others will be doomed to eventual elimination. Also the contrasting heel is not regarded as a permanent institution. The construction of the heel in self color is such as to increase the shapeliness of the ankle and as such has been adopted by the consumer as a very helpful adjunct to the use of full fashioned stockings.

Exports of Hosiery Decline

Total exports of hosiery shows a falling off of about a million dozen pairs as compared with 1926, while the value has decreased nearly $3,000,000. All classes share in this reduction in about the same relative proportions. Among the countries showing the greatest falling off in cotton hosiery are the United Kingdom, Mexico, Colombia, and British South Africa. In this class of goods Central America, the Dominican Republic and Peru evidence fair increases. In silk hosiery the United Kingdom shows the most startling decline. For the eleven months ended November, 1926, this country took 212,834 dozen, while for a similar period in 1927 the total was only 82,564 dozen. Among other declines are Canada and British India. The only substantial increases are noted in the case of unlisted South American countries and the Philippines. Also in rayon hosiery the United Kingdom made a very poor record during 1927. The decline is from 139,967 dozens in 1926 to 44,849 dozens in 1927. Practically all countries show decreases in this type of hosiery. The exceptions are Canada, Cuba, Colombia, Philippines and Australia. The total for the 11 months in 1926 of rayon hosiery exported was 1,153,470 dozens valued at $4,355,379, as compared with 1,073,217 dozen valued at $3,612,997 in 1927. The totals of exports and imports of cotton and wool hosiery for the two respective periods are shown in tabulated form at the beginning of this article.

Sweater Maintains Comeback

Volume of Staple Goods During Year Mostly in Evidence

A FEATURE which has characterized the outerwear market during 1927 has been the revival of demand for sweaters and the corresponding decline in favor of the lumberjack and the wind-breakers. During 1926 the latter type of garment probably reached its apex, at least so far as the purchases of the wholesaler were concerned. It is questionable if distribution into retail hands and to the final consumer was as great as the majority anticipated. The result was a carry-over that turned demand away from this type of garment and toward the conventional sweater. It was not until last fall that it began to be appreciated this demand had a permanency to it which augured well for the current year. It is true that sweater manufacturers sold a larger volume of their product as the year 1927 opened. But they had comparatively little faith in the continuance of the trend and fitful operation of their plants as a consequence. As a result a good many buyers found it difficult to secure satisfactory deliveries before the summer was over. Undoubtedly considerable business was lost to the jobber on account of his inability to forecast an improved situation. Manufacturers of all kinds of textiles have been slowly but surely adjusting themselves to the method of hand-to-mouth buying. In other words, they have seen to it that the operation of their plants was on a basis that meant no accumulation of a burdensome character. Rather than

pile up a stock of goods in the hope they would eventually sell, the manufacturer has shut down his mill indefinitely or curtailed a certain proportion of his machinery. Nowhere was this more true than in outerwear mills.

1927 Opening Fitful

At the end of 1926 the decision again to hold a concerted opening in Chicago was viewed with more or less discouragement by those who had gone through previous experiences of this kind and who felt there was little likelihood of a satisfactory outcome of such cooperative selling. Events justified their apprehension in large measure and what with an early opening and indifference on the part of the buyer the season started off far from auspiciously.

Salesmen who made early trips reported that the buyer was not interested in merchandise and that lines had been put on the market too early. Nevertheless, as the season progressed these same representatives discovered that the jobber was taking more interest and subsequent trips developed a volume of business that showed renewed interest in the sweater *per se*. Buyers coming to this market early in the year began to look for lines of sweaters in which they had evinced no interest in the past but on which they determined to operate, carefully it is true, but at the same time with evidence of their faith in the eventual distribution of these goods. As the year progressed and jobber salesmen went on the road this faith was justified. The result was that the wholesaler came back for additional quantities which were not always obtainable in just the type and construction that the buyer desired. The result was that a great deal of substitution was necessary and considerable dissatisfaction was expressed by those who had only themselves to blame for not getting what they wanted when they wanted it.

Staple Sweater Predominates

In this revival of demand the staple sweater held the most prominent place. It is true, fancies of certain kinds, principally in ladies' goods, were taken, but as far as men's garments were concerned the staple outpointed all other varieties. This has continued to be the case throughout the season and gives every evidence of permanency for 1928. Lines of staple sweaters have been brought out this year that show an excellence of construction and care in trimming, packing, etc., that should assure manufacturers of hearty response. Too often in the past merchandise of this character has been turned out lacking the refinements which should characterize a garment of this character, with the result that the reaction of the final consumer reflected back to the retailer and the jobber has been decidedly discouraging. It is believed that one of the most important developments of the year has been the marked improvement shown by reputable manufacturers in the character of their product. In fact, it is believed this attention to detail in manufacture is largely responsible for the improved demand which has been witnessed. The sweater today is accepted as a staple and in many parts of the country regarded as an actual necessity as part of the average man's wardrobe. This does not take into consideration the sport element and the demand resulting from the increase in outdoor activities. It is the all-round adaptability of the garment which has made it such a universal article of wear, especially among the laboring classes. This is particularly true in northwestern markets, but the wide distribution of the sweater and its acceptance in southern markets, particularly, is a matter of more than passing comment.

Another Chicago Convention

As time drew near to decide whether another convention should be held in Chicago, at which outerwear lines should be cooperatively displayed, the satisfactory volume of business which had been received during earlier months of 1927 convinced sellers it would be worth while to try the experiment again. As a consequence a convention was held and though many predicted it was set at too early a date, the results seemed to justify the effort. Reports indicated that buyers were more representative in character than ever before and that the aggregate number was decidedly larger than in previous years. But more important purchases were of satisfactory character, not only from the manufacturing jobber who bought to piece out the lines he made himself with others which he could secure at Chicago, but the regular jobbing trade were conspicuous in their operations and in the volume of merchandise which they ordered. It is probable that a larger number went to Chicago than at any other similar opening. This is true not only of sellers but of buyers as well. The initial purchases which characterized the opening at Chicago were continued as salesmen went on the road. It is felt that the 1928 season is practically assured.

Prices Fairly Steady

Of course there have been instances of price irregularities, for it would be a remarkable season when these were not in evidence. But it must be admitted that there has been nothing of demoralization in the price situation for the coming year. It was feared at one time that on cotton sweaters on the cheaper order events were tending toward intense competition, but there has been little development along these lines and the market today is apparently resting on an even keel. With the advance in wool there has been little incentive to drop the price on garments containing this raw material as a component part. Buyers have realized the unlikelihood of such reductions based on any raw material argument and, consequently, they have not pressed the selling agent very strongly for any adjustment of prices. Where lines were thought to be intrinsically meritorious they have been taken without much haggling and others have been passed by without any serious attempt to obtain them at a lower figure. Sweater mills throughout 1927 have been enabled to run much nearer to capacity than for a number of years. Of course this does not apply to every plant and there is evidence in a good many cases of over-production. At the same time, little evidence of necessity of radical shut-down has shown itself during recent months and the outlook is for a fairly continuous run during 1928. It is admitted profits are not all that can be desired, especially in view of the higher cost of material. At the same time, the larger volume of business has made possible the operation of plants on a slightly reduced overhead, offsetting to an extent increased cost of raw material.

Buyers' Demands

There has been little cessation of buyers' request for increasing service during the year. The demand for the distribution of this class of textiles to the retailer to prevent the necessity of the jobber carrying stocks has long been a feature of this business. Sellers have become accustomed in a good many instances to this method and have worked out plans whereby they can distribute their merchandise to the retailer and yet through the jobber's hands. The development of the drop shipment idea has been witnessed in this division of the market as well as in others and it would seem more feasible here than in certain other classes of goods. Of course there is a decided objection to sending to the retailer anything less than case lots and the majority have set their face strongly against any such method of operation. The bulkiness of this product makes case shipments oftentimes possible that would not be attractive to the retailer in less bulky goods. Also the increase of chain store business has been a matter for decided consideration with the seller, who has appreciated the increasing possibilities of trade with this class of buyer. Syndicate buying has also been a feature of no less importance than in the past. While a number of mills refuse to deal with this class of trade, the majority appreciate the size and volume of these orders and feel they cannot disregard them as long as the jobber continues to operate in retail manner.

Bathing Suit Outlook

Certain sellers of bathing suits have come to the conclusion as a result of their experience during the year that they should be ready to offer their lines when the buyer shows a disposition to operate. Of late there has been a tendency to wait until later in the year before showing a new season's line. This decision has been fostered by the buyer who has not been particularly keen about commencing his operations, but in instances the seller feels he has made a mistake by being influenced to delay his openings and that it will be better for him to get this business out of the way at the earliest possible moment. As a result it is likely this year that bathing suit operations will be started at irregular dates and that the buyer will be pressed to make his selections without the ordinary delay. A good many have been discouraged at the total volume of bathing suit business during the last few years, but nevertheless, there is a feeling that this merchandise is coming back into its own to a great extent. It is true that the cheap cotton bathing suit has comparatively few friends and that the tendency is in the direction of the all-worsted garment. Here the price outlook is favorable to higher levels, on account of the increasing cost of raw materials. It also seems as though the tendency toward fancy effects was waning somewhat. Although there will always continue to be lines of fancy color combinations and novelties in the way of patterns, the solid color garment is expected to be of greater importance, especially in the medium priced qualities.

Knit Underwear Coming into Own

By F. M. Shipley
Treasurer, Piqua (O.) Hosiery Co.

I BELIEVE that the knit underwear industry is fast coming back into its own. I believe more young men, men and boys are finding today that knit athletics are what they want, and that the popularity of this garment is only beginning. I believe there is a good future ahead of the knit goods business, if it is conducted properly and distribution handled carefully and intelligently.

We will have to learn, however, that in the manufacture and in the sale of knit goods, as well as a great many other lines of business, we will have to keep abreast of the times and meet the situations as they come up to us. These are the things we are trying to do.

I am glad to say that our plan of distribution seems to be meeting with greater success, and that our plants are running full 100% capacity, and that we have already booked a very satisfactory portion of our business for 1928.

Outlook for Knitted Underwear Bright

By E. A. Clements

President, Globe Knitting Works, Grand Rapids, Mich.

The outlook for 1928 is bright for knitted underwear. The consumer demand for knitted underwear is increasing daily and this should have a very favorable effect upon our branch of the industry.

Domestic Dye Industry Maintains Stable Basis and Effects Further Price Reductions

Decrease in Number of Firms One of Interesting Features as Producers Enter Second Decade

THE domestic dye industry has entered its second decade of real development in a stable and satisfactory position, so far as actual market trends are concerned. The improvement in the cotton goods industry in 1927 was reflected in the market for coal tar products. There was more of a tendency to anticipate future requirements of dyes and there was less evidence of sacrifice-cutting of prices below profitable levels.

As usual at this time of the year, it is impossible to present definite figures on production of dyes for the year just closed. Returns are being made to the United States Tariff Commission and preliminary figures will undoubtedly be available early in the spring. The last official information was that given for 1926 which showed an increase in poundage production of 2% over the previous year. It was stated, with all due qualifications, in last year's Annual Review and Forecast Number of TEXTILE WORLD that the best opinion indicated a 1926 output which would not represent a material change from that of 1925, and that if any difference existed it was towards an increase. The official production figures for 1926, published later in the year, bore out this forecast since they showed an increase of 2% in poundage over 1925.

At present it seems to be quite generally believed that the 1926 level of production was certainly maintained in 1927 and that an increase was probably effected. Ideas on the amount of this increase vary so widely as to make the range too broad for the basis of a worth-while forecast.

Decrease in Number of Firms

One of the most interesting developments in the dye industry recently has been the decrease in the number of firms engaged in dye manufacture. A glance at the accompanying table, covering dye production from 1917 to 1926 inclusive and comparison with 1914, will show that in 1926 there were 14 fewer producers than in 1925. The decline in the number of producers since 1919 was even more marked, the decrease being 29 firms.

Such a development is entirely logical. From seven firms engaged in this industry before the war—and those mostly assembling plants—the number increased to 18 in 1917, the first year of the real dye impetus; to 78 in 1918, and to 90 in 1919. Naturally the lure of a new and booming industry attracted large numbers of individuals. It was surprising to many that there was not a greater mortality from 1919 on than really was noted. The depression and keen competition which ensued after that year might easily have been expected to force many firms out of business. However the number of producers stayed fairly stable. In 1923 there were 88 manufacturers, a decline of only two from the peak of 1919. In the next two years the number dropped off to some extent and in 1926 the most important mortality developed.

DYE PRODUCTION AND PRICE TRENDS

The following table shows comparative dye production in the United States from 1917 to 1926 inclusive, and comparison with 1914. This table is based on reports of the U. S. Tariff Commission.

	No. of Firms	*Dyes Produced*	*Value*	*Average Price Per Lb.*
1914.....	7	6,619,729 Lbs.	$3,470,096	$0.37
1917.....	18	45,977,246 Lbs.	57,796,228	1.26
1918.....	78	58,464,446 Lbs.	62,026,390	1.06
1919.....	90	63,402,194 Lbs.	67,598,855	1.07
1920.....	82	88,263,776 Lbs.	95,613,740	1.08
1921.....	74	39,008,690 Lbs.	32,370,000	.83
1922.....	87	64,632,187 Lbs.	38,779,312	.60
1923.....	88	93,667,524 Lbs.	51,048,800	.545
1924.....	78	68,679,000 Lbs.	37,086,660	.54
1925.....	75	86,345,438 Lbs.	40,582,356	.47
1926.....	61	87,976,624 Lbs.	36,950,182	.42

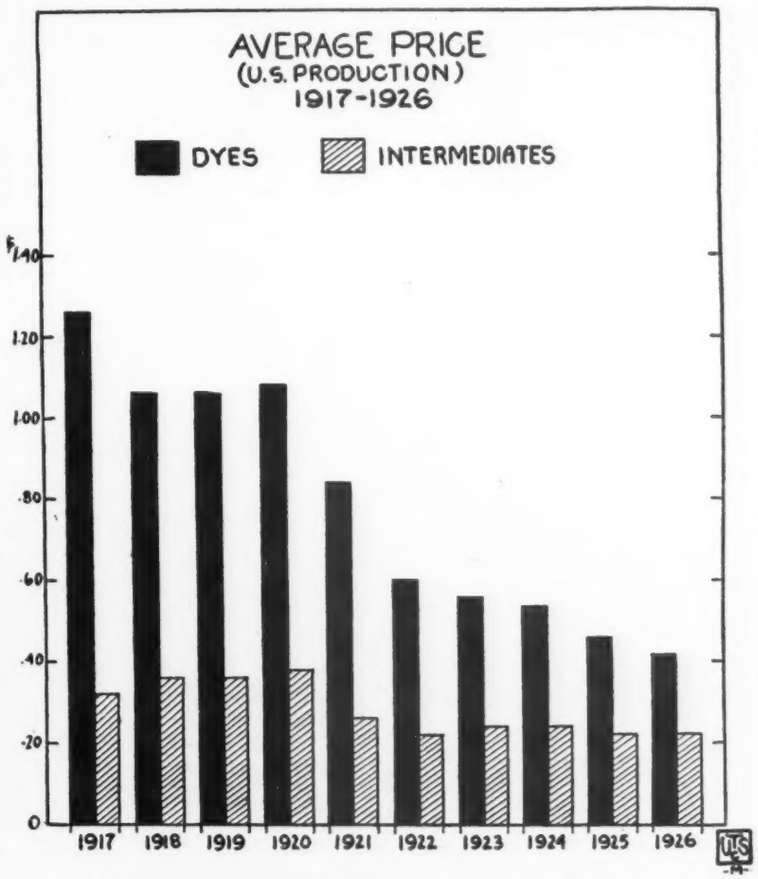

Chart from Tariff Commission's 1926 Dye Census Showing Decline in Prices of Domestic Products

No Danger of Monopoly

However the domestic industry is still very far from a monopolistic condition. This is borne out by the Tariff Commission's analysis of the situation based on 1926 figures. The report stated: "The United States has more dye manufacturers than the rest of the world combined. The capacity of domestic plants, estimated at about one-fifth of the world's total capacity, is far in excess of the quantity that can be marketed."

Certainly a country which has a capacity to produce one-fifth of the world's total supply and yet has a larger number of firms than the rest of the world combined, is not in danger of a monopoly. In fact the danger would seem to lie in the other direction. In other countries there has been an increased tendency toward merging of individual firms plus a corollary tendency toward agreements and combines with groups of other nations. This means a strengthening of the position of European dye manufacturers which cannot be ignored here.

The production of the so-called tonnage dyes is necessarily a large scale proposition. Competition is so keen and the margin of profit consequently so narrow that hope of returns must be based on volume of business done. There is of course room for many smaller firms in the field of the more specialized products but here too an excessive number is dangerous from the standpoint of competition with the industries of other nations. If no other factor were considered, that of the research alone is a serious one. Duplication of effort in developing new and improved types of dyes is expensive and places our industry at a disadvantage.

The Tariff Commission made the definite statement in its last report that "increased competition will doubtless continue to eliminate plants and will thus reduce the productive capacity until it more nearly conforms to the demands of the home and export markets." This seems entirely logical but it might be turned around to indicate that a further reduction in the number of plants is necessary if home markets are to be maintained against the competition of outsiders and if export markets are to be broadened.

This does not mean a wholesale and depressing mortality of existing firms, the great majority of which have proved that they possess the

PROPERTIES of Pyrex Industrial Glassware	INDUSTRY: Heavy Chemical	Fine Chemical	Electro Chemical	Refrigeration	Oil Burner	Rubber Goods	Textile Machinery	Ceramics	Cellulose	Coal Tar Products	Explosives	Food Products	Leather	Paint and Varnish	Paper	Stoves and Furnaces	Laboratory Apparatus	Electric Illumination	Electric Ray Tubes
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HARDNESS [Scleroscope 120]																			
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HEAT RESISTANCE [Softening Temp. 600°C]																			
HEAT TRANSFER [Up to 125 B.T.U. per sq. ft. per hr. per degree F.]																			
HEAT SHOCK RESISTANCE [300°C to 5°C]																			
TRANSPARENCY																			
CHEMICAL STABILITY																			
LOW EXPANSION COEFFICIENT [.0000032 Between 19°–350°C]																			
DIELECTRIC STRENGTH [35 KV. per 100 mil. thickness]																			
LOW DIELECTRIC LOSS																			

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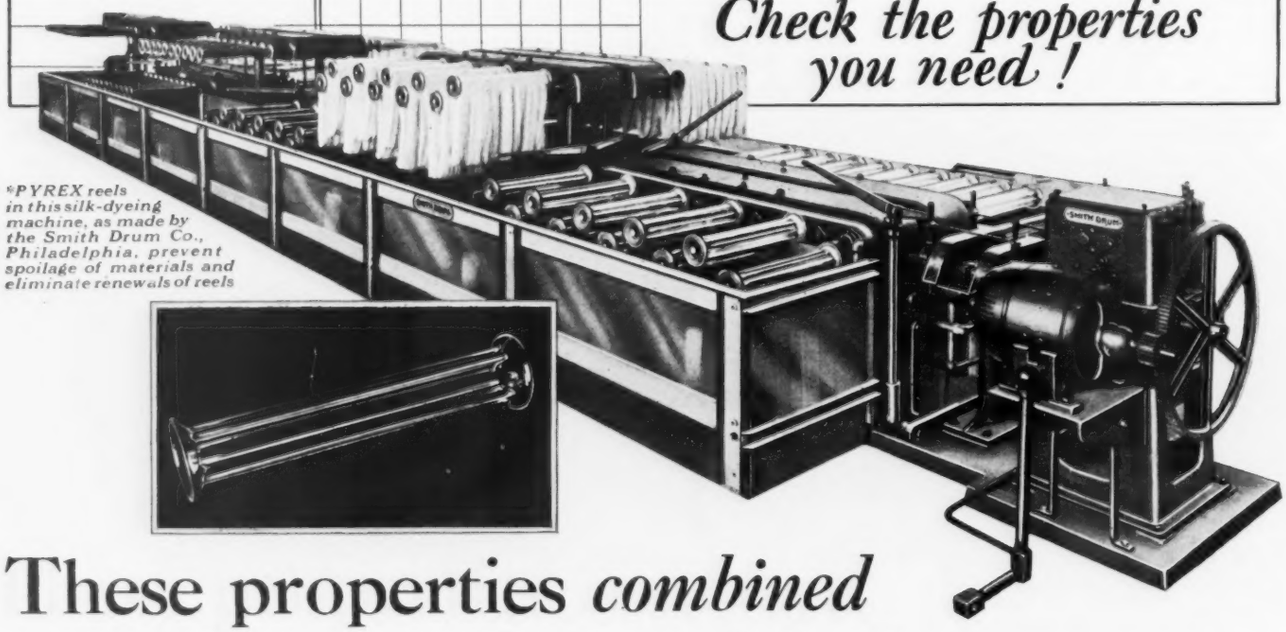

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financial and technical soundness necessary to weather the storm of competition. It means rather that existing units may be expected to be merged to some extent into larger units. This tendency is so well marked in many lines of industry at present that the country has more or less adjusted itself to a belief in the inevitability of such combination.

Supplying Domestic Needs

Interest in dye production centers partly upon the extent to which the American industry supplies domestic needs. The present ratio of production to consumption, assuming the latter to equal sales plus imports, is approximately 93%. More important still however is the steadily increasing ability of our industry to supply the specialized types of colors which have made up the bulk of our imports. Our manufacture of vat dyes showed a 54% gain in 1926 over 1925 and the latter year in turn showed a gain of 43% over 1924. It is almost certain that further increase will be recorded in 1927. The use of fast dyes is increasing rapidly and domestic producers are keeping in step with this advance.

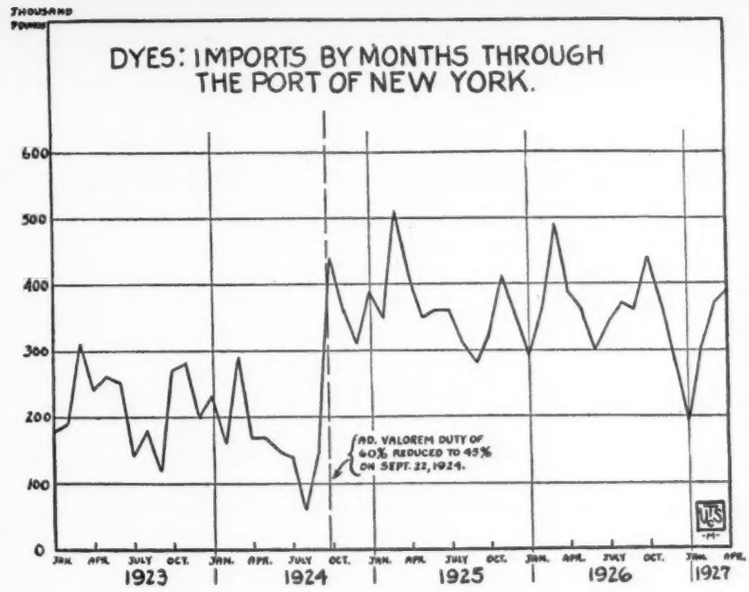

Chart from Tariff Commission's 1926 Dye Census

Foreign Trade

A slight increase in dye imports was recorded during the first 11 months of 1927 as compared with the similar period of 1926 but the differential was not sufficiently large to be of significance. The 1927 figure was 5,139,309 lbs. against 4,670,414 lbs. for 1926. Exports also showed a slight gain, the total for the first 11 months of 1927 being 24,544,218 lbs. against 23,707,572 lbs. in the corresponding period of 1926. This means that approximately 30% of our domestic production of dyes is finding its way into foreign markets.

Further extension of export outlets is almost essential if maximum development of the industry is to be realized. The realization of this extension will become increasingly difficult as the present tendency towards international agreements and combines in Europe becomes intensified. The weapons with which the so-called trade war must be fought by our industry are principally two: larger and more effective units; and untiring effort along the lines of research in technique and in distribution.

Prices Still Lower

Meanwhile from the standpoint of the consumer in this country, developments in the dye industry have been entirely beneficial. No better index of this is found than in the steady decline of dye prices during the last decade as shown in the chart accompanying this article.

International Agreements Important Factors In European Dye Industries

Anglo-German Combine Still a Remote Possibility—Steady Progress Being Made

From TEXTILE WORLD'S British Dye Correspondent

THROUGHOUT the greater part of 1927 rumor was busy in regard to possible fusions of interest between the various branches of the European chemical industry and particularly in so far as the dyestuffs position was concerned. Naturally the importance of the position has been such as to create the greatest possible interest on both sides of the Atlantic and exaggerated statements made on little or no foundation have been found in the press of all countries. TEXTILE WORLD, by the aid of observers of the actual position in Europe, has been enabled to guide its readers and at times has published information which has been in direct contrast to the general news provided by the daily press.

For some time the difficulties in the way of a complete agreement in Europe have been forecast and without a personal knowledge of the temperaments of the various European nations it was impossible to keep in touch with the real state of affairs. While, therefore, it is not possible to claim that the true outcome was forecast, it is some confirmation of the reports which have appeared in TEXTILE WORLD to read the latest authoritative information from Germany. It is now clearly pointed out that an agreement has been entered into between the German and the French chemical interests but this is understood to be limited to dyestuffs. Further it is also definitely stated that no agreement has been arrived at between the I. G. Farbenindustrie of Germany and the Imperial Chemical Industries of Great Britain.

According to the British chemical press it is understood that an international agreement might have been arrived at on a basis of allocation of exports which would have allowed Germany to export 75% of her output, France 12% and Britain 13%. This calculation was, however, based on the trade returns for the year 1926. It will be recollected that in that period the British Industry was severely handicapped by the long drawn out coal strike and that the trade figures for that year were not, therefore, to be regarded as a fair average. Moreover, a further and almost insurmountable difficulty is the fact that Britain regards her Empire as included in her home market and, perhaps naturally, this position is not agreed to by the other participants.

The position so far as an agreement with Britain is concerned is immensely increased by the development of the British industry now proceeding on very satisfactory lines. It is further complicated by important questions relating to the Empire and to national and imperial defence and in some respects public opinion would be a highly important factor in regard to any agreement formed between Britain and Germany. Rightly or wrongly, there is a natural distaste on the part of the British public to enter into any agreement which might place the country in a position, as it were, inferior to that of Germany.

Merger Progress in 1927

The consolidation of the British dyestuffs industry by the formation of the Imperial Chemical Industries Ltd. is not a matter for attention in a review of the year 1927 but during that year considerable progress has been made in the further drawing together of the various companies forming this gigantic combine.

So far as the dyestuffs industry is concerned the most important partners in the combine are British Dyestuffs Ltd. The history of the firm dates back to 1856 when Perkins, encouraged by the dyeing firm of Pullars, Ltd., patented the first artificial dye. A plant was established near London in 1857 and for a time all went well with the British dyestuffs industry, the forerunner of those in all other countries.

It was in 1873 that competition from foreign producers, chiefly in alizarine, began to be seriously felt and in 1885 it was actually said that 80% of the dyes used in the country were of foreign manufacture. This state of affairs scarcely improved at all and when war broke out in 1914 the country was found to be bereft of large stocks of dyestuffs. "Necessity being the mother of invention" the British industry, under the able guidance of Dr. Levinstein and others, had to deal with the situation and from the formation of the British Dyestuffs Corp. in 1917 until the present day, the story of the industry in Britain is a matter of common knowledge. It is, however, worth while mentioning the origins of the trade for in any international negotiations affecting Britain, there is a curious—perhaps natural, perhaps absurd—feeling that a share of the credit for the original inventions should be obtained. On the other hand, as Professor Meldola said in 1886, the "strength of our competitors lies in their laboratories." The British industry has now an excellently equipped research department and sooner or later, no doubt, an eventual agreement will be made with the great German industry.

Statistical Comparison

The compilation of statistics in regard to the production and consump-

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NATIONAL N DYES

tion of dyestuffs is an extremely difficult matter and the results are likely to be subject to a considerable margin of error. With these reservations the *London Times* Trade Supplement recently issued two tables showing the production and consumption of dyestuffs and the same are quoted below:

PRODUCTION OF DYESTUFFS

	1913 Tons	1925 Tons
Germany	135,000	72,000
Switzerland	10,000	9,000
France	7,000	16,000
Great Britain	5,000	15,000
United States	3,000	38,000
Other countries	2,000	15,000
Total	162,000	165,000

CONSUMPTION OF DYESTUFFS

	1913 Tons	1925 Tons
British Empire	34,000	25,000
Europe	64,700	63,000
Far and Near East	35,400	77,000
United States	26,000	
Other countries	1,900	
Total	162,000	165,000

German Foreign Trade

Exports of aniline, sulphur, alizarine and indigo dyes from Germany in the year 1913 amounted to 54,340 tons and in 1925 to 17,109 tons. In the first half of 1926 exports of these dyes amounted to 9,147 tons and in the first half of 1927 to 12,172 tons. From this summary it may be seen that Germany is regaining a proportion of her former trade. In the figures for the first half of 1927 are included reparation deliveries to Belgium, 334 tons; France 64 tons and Italy 56 tons.

The German imports in 1913 amounted to 1,620 tons and in 1925 to 836 tons. In the first half of 1926 imports were 858 tons and in the first half of 1927, 1,111 tons.

The increase in exports is proportionately greater in the case of anilines, sulphurs and alizarines than in indigos. Imports of alizarines and indigos are on the other hand now very small, the whole of the increased takings being in aniline and sulphur dyes.

Situation in France

In France, the dyestuffs output has fluctuated considerably in the last few years. According to figures published by the *British Chemical Trade Journal* the total production fell from 14,952 metric tons in 1924 to 13,009 metric tons in 1925 but rose to 15,590 metric tons in 1926. In the last mentioned year there were produced 3,637 tons of acid colors, 401 tons of mordant colors 754 tons of basic colors, 13,457 tons of direct colors, 625 tons of non-acid mordant colors, 4,286 tons of vat colors, 2,080 tons of sulphur colors and 349 tons of unspecified products. During 1926 France exported about 20% of her production and imported slightly over 1,300 tons.

It is understood that the terms of the agreement previously mentioned, which concerns the I. G. Farben industrie of Germany on the one part and the Kuhlmann interests in France on the other, refer mainly to the export trade. No details are as yet known though it is reported that the French quota is 15,000 tons, including 10,000 for home use and 5,000 for export. It is also reported that the Etablissements Kuhlmann are about to increase their capital by 50,000,000 francs. The present capital of the concern is 190,000,000 francs. In 1926 a dividend of 16% was paid against 30% in the three preceding years. Production in 1926 is estimated at 9,900 tons, comprising 4,200 tons of indigo, 3,300 tons of synthetic dyestuffs of various kinds and 2,400 tons of alizarine.

Other Countries

In Italy, it is said that the home plants now meet about 60% of the internal demand and imports are now about one-fifth of those in 1913. In addition exports amount to over 1,000,000 kilos per annum and despite the increased consumptive power of the Italian textile industries are equal to the imports in volume.

In Spain the German I. G. Farbenindustrie hold 50% of the capital in the Fabricacion Nacional de Colorantes y Explosivos, which is a combination of the leading makers.

Yet another European country where the output of dyes is rapidly increasing, is Poland. This country has now a very much larger area than before the war and its commercial significance is at times overlooked. The production in 1927 will, it is estimated, reach 1,000 tons which is a 66% increase over 1926. The increased consumption is due to the gradually improving textile industries.

In conclusion it may be said that, speaking generally, the European dyestuffs industry is progressing steadily and well. Naturally the rapid strides made by the United States, which in a sense is now an exporting nation rather than an importing one, are being carefully watched. It may, however, be said that the chances of an all-European Cartel are as yet still some distance off. The Franco-German agreement will probably extend to Switzerland and to a closer working arrangement with Belgium but for reasons given above there is little likelihood of a comprehensive agreement with Britain for some time. On the other hand, "where there is a will there is a way" and given the will on the part of the heads of the industry in Britain and Germany, there will doubtless follow at perhaps some distant date, a complete agreement. It is impossible, in the absence of any political rupture of a major order to avoid an ultimate decision of this kind. In the meanwhile there is always the possibility of an agreement between Germany and the United States, leaving Britain out.

Textile Chemists and Colorists Association—Its Technical and Research Program

A Resume of Its Activities Since Its Organization About Six Years Ago

By Louis A. Olney

Past President and Chairman of the Research Committee

THE American Association of Textile Chemists and Colorists came into existence a little more than six years ago, and was the result of a long felt need for a truly scientific and technical organization among American textile chemists and colorists. From a group of less than 20 men who had faith in its possibilities it has grown to a membership of 1,000, and with six local sections holding regular meetings throughout the year, it is possible for members all the way from Maine to Georgia to attend meetings with more or less regularity.

The constant growth of the association, as well as its accomplishments, has demonstrated without any doubt the desirability and value of such an organization, not only to its individual members but also to the textile industry in general, and there is every reason to believe that an association of its character will be of even greater value during the years to come.

Objects of the Association

The objects of the association as set forth in the Constitution are as follows:

To promote increase of knowledge of the application of dyes and chemicals in the textile industry.

To encourage in any practical way research work on chemical processes and materials of importance to the textile industry.

To establish for the members channels by which the interchange of professional knowledge among them may be increased.

Research Committee

Since the inception of the association the work of the research committee has been one of its most important activities. This committee meets regularly once a month, except during the summer, and has been so organized as to include 30 of the leading textile chemists and colorists of the country, and to represent as far as possible the diversified interests of the textile and color application industries.

Standard Methods of Dye Testing

During the early meetings of the committee it was unanimously decided that the most urgent demands were for the formulation of a set of standard methods for determining the fastness of dyes upon the fiber, and for systematically recording the results. This proved to be a far greater undertaking than was at first anticipated, and as a result, it is not completed as yet. Standard methods for determining the fastness of dyestuffs on cotton, wool, silk and rayon, to washing and laundering, fulling, dry and wet heat, perspiration, acids, alkalies, carbonization, sea water, and chlorine on cotton have been formulated and may be found in the 1927 edition of the Association Year Book.

In order that these methods might be tried out under the varying conditions of a number of laboratories, representing somewhat different requirements and by workers involving somewhat different points of view, representative sets of dyeing upon cotton, wool and silk were forwarded to 10 different laboratories representing consumers, textile manufacturers, dyestuff distributors, and general testing laboratories. These laboratories gladly cooperated and the results of their tests, together with such criticisms and suggestions as were made are being considered at the the present time, and as far as may be thought desirable are being incorporated in a revision of the methods.

Fastness to Light

The endeavor to establish a suitable standard method of testing the fastness of dyed fabrics to light, has been more difficult and time consuming than that of any of the previously mentioned types of fastness. The sub-committee that has been working upon this subject has been carrying out a more extensive and painstaking study of the whole subject of fastness to light, than has been previously undertaken either here or abroad. Although a portion of their report has already been published, much remains to be done before the complete report is ready, but when finally published we believe it will be a truly monumental work.

Some detail of what this sub-committee on light fastness under the chairmanship of Wm. H. Cady, has been doing may be of interest. The work for the most part, has been done at the Bureau of Standards under the supervision of Wm. D. Appel, chemist

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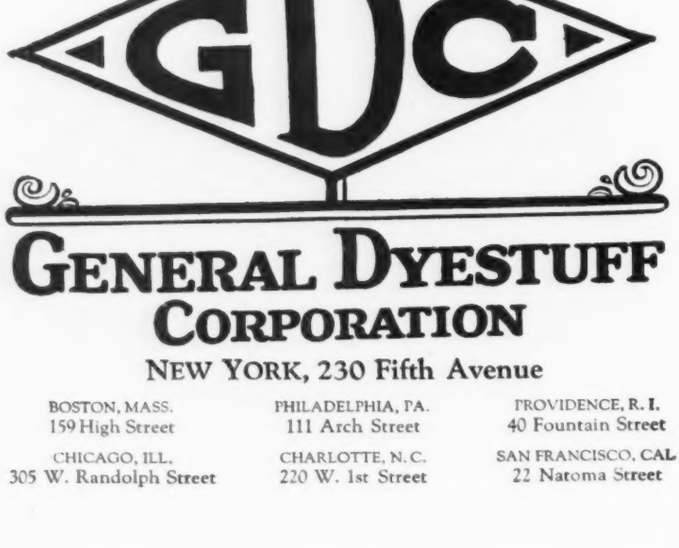

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for the Bureau and a member of the research committee of the association, and Wm. C. Smith, a full time research associate of the association. The investigation has proceeded along several lines and a representative range of dyed samples, considerably more than a thousand, have been exposed to various types of light under a variety of conditions. These exposures have for convenience been grouped into series and of these Series III, IV and V will be mentioned.

Series III—Light Exposures

Series III is the only group of exposures upon which anything like a complete report has been made.

In this particular series 20 dyes were selected which were not only representative but which had previously been found to be somewhat abnormal in their fading properties. These were dyed upon cotton, wool and silk, the dyeings made into uniform sets and exposed under varying conditions to daylight, violet carbon arc Fade-ometer) and incandescent lamp.

The daylight exposures were made in Washington; Three Rivers, Quebec; Cedartown, Ga.; Auburn, N. Y.; Fall River, Mass.; So. Manchester, Conn., and Calistoga, Cal. Violet carbon arc exposures were made independently in Washington, Lawrence, Mass., and So. Manchester, Conn. In the above mentioned report there is included a tabulation of the results of 400 of these exposures.

The daylight exposures were made in such a way as to determine first the influence of glass; second, the angle of exposure, samples being exposed with and without glass, and perpendicularly, horizontally and at an angle of 45°; third, the influence of free excess of air; fourth, the difference between a sunny and cloudy sky; fifth, the difference between north and south light; sixth, the difference between a continuous exposure day and night and in all weather as compared with exposure to sun and clear sky only; seventh, the effect of time of year, and light effect of geographical location.

The results of series III may be summarized as follows:

Twenty-nine identical sets of 20 selected dyeings were exposed to daylight under a variety of conditions, and in different localities at different times of the year, also to the violet carbon arc light, and to incandescent lamp light under controlled conditions of atmospheric humidity. The exposures were timed so as to obtain the same average fading in each set. Records of the energy received by some of the samples during exposure were obtained with the aid of a barium photoelectric cell and automatic recorder. Although general conclusions are hardly justified by the relatively few samples studied in Series III exposures, the evidence clearly points to the following:

1. The relative fading in a series of dyeings exposed to daylight is decidedly influenced by the type of exposure, whether to direct sunlight, north sky, or cloudy sky light, and whether the exposure is continuous day and night in all weathers or only when the sun is shining.

2. Approximately reproducible relative fading in a series of dyeings exposed to daylight is obtained at widely separated stations in the United States when the following conditions of exposure are observed: Samples are exposed at an angle of 45 degrees from the horizontal facing south, between 9.00 a. m. and 3.00 p. m. on sunny days only, in a cabinet covered with a good grade of window glass approximately one-eighth of an inch thick and open at the sides in such a way as to allow free access of air to the samples. The distance between the samples and the glass should be not less than one-half inch.

3. The test described under (2) is recommended at this time as standard for a daylight exposure test.

4. No artificial light source can be recommended at this time as standard for light exposure tests. The violet carbon arc is convenient, and no doubt the best available for quick tests. The incandescent lamp is not practicable.

5. The quantity of radiant energy falling on dyeings during exposure, as regarded by a photoelectric cell, does not correspond to the amount of fading produced.

6. The fading of dyeings by light is materially influenced by the conditions of exposure such as humidity of the air about the samples, and the amount of the influence varies among the individual dyeings. A control of atmospheric conditions about the samples is essential for a standard laboratory test.

In connection with the exposure tests of Series III an investigation was made of the barium high vacuum glass photoelectric cell; a full report of this made by Wm. D. Appel is incorporated with the report on Series III.

Series IV—Light Exposures

Series III described above is in a way preliminary to Series IV and will present similar data covering a very large number of samples. Series IV includes five sunlight tests and one with the violet carbon arc with over 1,200 dyed samples in each test. The large majority of these exposures have been completed, but the compilation of a report on them is a large undertaking which probably will not be finished until the summer of 1928.

Series V—Light Exposures

In this series the influence of nine different types of glass as compared with no glass, and ordinary window glass, are being determined. The glasses selected include the following types:

1. Corning "Corex" glass transmitting freely to beyond the limit of the solar spectrum.

2. "Vita" glass obtained from Hires-Turner, intermediate in transmission between 1 and 3.

3. Ordinary window glass.

4. Intermediate in transmission between 3 and 5.

5. Absorbing the ultra-violet.

6. Absorbing ultra-violet and visible except the red.

7. Absorbing the red and infra red but transmitting the visible and ultra-violet.

8. Absorbing the visible and transmitting the ultra-violet.

9. "Actinic Glass," Pennsylvania Wire Glass Co. Said to give protection from the ultra-violet and heat rays.

Series VI—Light Exposures

In series VI an endeavor is being made to measure more accurately than ever before the effect on fading of variations in the following factors: (1) The intensity of light; (2) The degree of humidity of the air; (3) The temperature. While it has been known for some time that these variables had a decided influence upon fading, particularly with certain dyes, this is the first time, as far as we are aware, that a serious quantitative study has been made of these particular phenomena.

Research Associate

Early last summer a full time research associate, William C. Smith, was engaged by the association, and since that time he has been working at the Bureau of Standards chiefly upon the work of the sub-committee on light fastness. The appointment of this research associate is the first step towards the promotion of a rather comprehensive program which is being developed by the research committee. In the near future it is expected that additional research associates will be engaged, and as soon as the necessary funds will permit a full time associate director of research.

International Cooperation

Progress is being made in an endeavor to establish international standard methods of dye testing and of recording the results. In March, 1925 a letter was forwarded to the British Society of Dyers and Colorists, expressing the desirability of formulating standard methods of dye testing which might be internationally recognized, and at the same time suggesting the possibility of a cooperative study of the whole subject. This suggestion was well received and early in 1926 the British society organized a large committee of prominent textile chemists and colorists for the purpose of studying the whole subject of standard methods of dye testing. Copies of our methods have been forwarded to each member of this committee, inviting study and criticism.

In Germany, a fastness committee has been actively engaged for a number of years in the study of dye fastness standards and methods of testing, and it has already published several valuable reports. Quite recently this committee expressed a desire to cooperate in the matter of international standards, and a similar expression of cooperative interest has been received from the Polish Commission on Standard Methods. Assurances have also been recently received that similar interests in France will lend their cooperation to this undertaking.

The establishment of international standards will undoubtedly require considerable time and involve many complications, but we believe the project is perfectly feasible, and the American Association of Textile Chemists and Colorists stands committed to assist in every possible way.

Special Researches

Up to the present time, under the direction of the research committee of the association, the following researches have been carried on, and reports thereon published in the Proceedings:

Research Contribution No. 1:
"Effect of Alkalies on Wool. Importance of Hydrogen Ion Concentration"—Harold C. Chapin, Ph. D.

Research Contribution No. 2:
"Quantitative Studies, Action of Alkalies (Caustic Soda) on Rayon Silks"—Arthur K. Johnson, S. B.

Research Contributiion No. 3:
"Studies on the Relative Hygroscopic Properties of Rayon Silks"—Arthur K. Johnson, S. B.

Research Contribution No. 4:
"Reaction of Potassium and Sodium Compounds on Wool"—Harold C. Chapin, Ph. D.

At the present time a continuation of Research No. 4 is being made on a practical scale, and it is expected that an additional report will be made later in connection with this.

Tabulation of American Dyes

For several years the Association has published in its Year Book, a tabulation of American made dyes, which is being completely revised in each edition. This list includes the names of 2409 American made dyes, with their classification, manufacturers name, and the Schultz and Color Index numbers. The dyes are arranged alphabetically and also numerically, in accordance with the Schultz and Color Index numbers. This list has already proved to be invaluable to dyestuff users and purchasers.

Future Plans

In closing this brief resumé of the work of the Research Committee of the American Association of Textile Chemists and Colorists, a few words as to future plans might not be out of place. One of the most important works which the association has in mind for the future is the preparation of standard dyed samples representative of the association's standard classification on materials of all fibers with respect to their fastness to both light and washing.

When this work is complete it will be possible for any textile manufacturer or other interested party to obtain from the association a sample of dyed fabric which shall be representative of the association's classification

And now John waves farewell to his friends, and to the readers who have accompanied him throughout the day. On a rainy night especially, chemicals have helped to make him comfortable.

THE rubber coat, the anti-skid tires, the rubberized top . . . all probably are the better articles for the R & H accelerators and other chemicals employed. The very car itself is a symbol of the swift and ever changing period in which we live. It is the more serviceable for the plating and case hardening compounds used in its fabrication. So too are John's clothes . . . his personal articles, sports accessories, household conveniences and office equipment. John's mission is finished. Thru the contacts of an ordinary day, *your* day, he has endeavored to visualize the important part R & H Chemicals and Service play in modern life. Probably the more an article has been improved by honest chemicals, the more its qualities are appreciated by the user. It is the thought John Doe would like to leave with you . . . a truth R & H has long accepted.

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1, 2, 3, etc., with respect to either light or washing. By exposing this sample to light simultaneously with any other dyed fabric it will be possible to determine the proper classification for the experimental sample. The same will be true in making tests for fastness to washing when standard and experimental samples are subjected to the same washing treatment. The advantages of having such standards available for use in connection with manufactured goods are too obvious to require elaboration.

Another work which the association proposes to undertake when funds are available is the classification of all important dyestuffs in accordance with the association's standards for fastness to all color-destroying agencies.

According to statistics there are no less than 10,000 concerns in the United States interested in some phase of textile manufacture or wholesale distribution, and if we add to these the number of large department stores, this number is necessarily greatly increased.

We doubt if many of these American textile manufacturers realize the extent to which they are constantly using processes and materials which are the result of long and extensive research work conducted for the most part in Europe. The mercerizing process, the schreiner finish, the various types of artificial silk, and a very large proportion of the coal tar dyes are striking examples of a few of the contributions that foreign research has provided for the use of American textile interests. Should this situation be more thoroughly appreciated by individual textile manufacturers, we believe that their sense of justice will lead them to support a purely American research project along the avenue of textile chemistry and dye application, as soon as they are shown that it is already actively functioning and not merely a visionary proposal as yet only in the paper and ink stage. We can never hope to interest all of these concerns to the extent of becoming corporate members but if we can interest 5% of them, we will have the necessary funds.

Furthermore, we believe that the textile manufacturer might be convinced that scientific research, well planned and supervised, might lead to just as valuable developments in the future as it has in the past.

Cooperation with Manufacturer

Let me mention one way in which I believe our association may be able to render a definite service to the textile industry.

During the last few years, but more particularly during the last two, there has been a constantly increasing demand by the buying public, and as a result also on the part of the merchandise distributing agencies, for faster colors, particularly as concerns light and washing.

The advocation of the use of faster dyes has become almost a slogan with certain of the popular type of domestic science and household economics publications, and not infrequently does it crop out in certain types of advertising publicity.

Better business organizations, and even governmental interests, are looking into the matter, and various organizations affiliated wih the textile industry are beginning to take notice.

As a result there has developed a situation which at the best is somewhat chaotic, and should the demands of over-zealous extremists, based for the most part upon a lack of exact knowledge as regards economic conditions, manufacturing limitations, and essential requirements, be given too much weight, they might react as an injustice or even an actual detriment to textile manufacturing interests.

It would, therefore, seem desirable that there should be some organization, the personnel of which was conversant with the scientific facts of the textile manufacturing and the textile coloring industries, to which such matters could be referred for a decision that would be equitable to both manufacturer and consumer. We believe that such a body exists in the research committee of our association.

Researches on Technical Problems

(*Continued from page* 155)

tween Different Finishes on a Cotton Cloth.

Research at Mellon Institute

At the Mellon Institute of Industrial Research, University of Pittsburgh, the following topics have been studied: Action of Boiling Temperatures upon Solutions of Neutral or Modified Soda; The Stability of Stock Solutions of Sodium Hypochlorite; The Action of Sodium Perborate Solutions upon Cotton; An Inquiry Regarding Sudsing Time in a 48 x 84 in. Y-Pocket Monel Metal Washwheel; The Shrinking and Felting Properties of Woolen Blankets; The Shrinking Qualities of Summer Suitings; Cotton Towels; and The Shrinking Qualities of Overall Materials.

The outstanding publication of this Fellowship for the year 1927 is George H. Johnson's comprehensive treatise entitled "Textile Fabrics," issued in August. During the first part of 1927, there was completed a broad investigation of possible moth-repelling chemicals, during the course of which the discovery was made that the cinchona alkaloids, as well as their derivatives, are particularly efficient mothproofing agents.

Bureau of Standards

The textile research work of the Bureau of Standards expanded rapidly during the last year. It is worthy of note that the textile industry is maintaining much of this work through the research associateship plan, and otherwise is lending very valuable assistance. There are now four associateships in the textile section, one of these consisting of four persons. Space limitations allow only a brief list of the studies carried on. More detailed information will be found in the issue of TEXTILE WORLD for Nov. 5, 1927. Mention should be made, however, of the following:

Physical Characteristics of the Mohair Fiber

Deterioration of Linen

Wear on Carpets with Development of Machine for Testing Wear

Measurement of Color Fastness

Studies of Wet Tensile Properties and Effect of Ageing of Rayon

Study of Tin-Weighted and Unweighted Silk

Rope Yarn Bending and Development of Apparatus for Measuring Resistance of Rope Yarns to Bending Fatigue

Removal of Stains

Development of Parachute Fabric and Machine to Determine Air Permeability

These are only a few of the studies carried on. For example, 370 problems were submitted by members of the National Association of Hosiery & Underwear Manufacturers to their research associate at the Bureau of Standards.

From the foregoing it will be observed that the textile industry has many achievements in the study of technical problems during 1927 to its credit. In addition, much work has been done in other industries which has a bearing on textile progress. Our correspondence in connection with this incomplete investigation indicates that an even more impressive list of accomplishments can be recorded next year, and it seems probable that with a continuation of the present trend the textile industry will soon take its rightful place among those progressive industries that are broadening and stabilizing business by organized fundamental research.

Buying Domestic Cotton

(*Continued from page* 162)

urer full responsibility for hedging and the cotton buyer full responsibility for the taking up of the raw material.

Certain Objections Answered

Several manufacturers and merchants with whom these subjects have been discussed, while admitting their soundness in principle, believe that their early and general adoption will be prevented by the lack of men capable of undertaking such responsibilities. They believe that treasurers will be slow to relinquish to a buyer the responsibility of buying cotton costing hundreds of thousands or millions of dollars and a mill manager the selection of the types, but this has already been done in many instances and merely involves the relinquishing of physical details that are not the logical and proper function of the mill executive. To the claim that there is an insufficient supply of competent cotton buyers we will readily agree, if it is to be assumed that each mill in the country is to have a cotton buyer, but if the immediate demand is not too large, and if cooperative buying by the mills is to be undertaken we feel confident that the supply will equal the demand.

To the claim that the majority of mill agents and superintendents have little more than a rule-of-thumb or superficial knowledge of cotton we may readily agree, but while they may have little scientific knowledge of the staple, either they or their overseer of carding has more practical knowledge than is generally appreciated, and in cooperation with a competent cotton buyer it will be found sufficient to insure marked improvement in the selection and mixing of the staple. It is claimed that comparatively few mill treasurers have more than the vaguest knowledge of the principle of cotton hedging, but we answer that there are reputable futures houses who will handle the mill's hedging or will advise regarding it, or reputable men trained in the business of hedging can be hired, or the average treasurer will be found sufficiently intelligent or sufficiently acquainted with the details of hedging to acquire sufficient skill.

Cooperative Selling and Buying

In closing we cannot refrain from observing that group or cooperative buying of cotton by the mills is a subject worthy of careful consideration. Particularly will this be the case if cooperative selling of cotton is to increase. Cooperative buying is the inevitable complement of cooperative selling, and if the latter movement is to develop much beyond its present scope the mills will be forced to buy cooperatively in self-protection. This is not a criticism of the methods of the cotton cooperatives, but a compliment; not only have they improved the handling of cotton to the advantage of growers and manufacturers, but their control of large quantities of certain kinds of cotton has given them a very important trading advantage, and if such groups are to grow the only manner in which manufacturers can offset this trading advantage is to meet it with equally powerful buying units. At the moment certain large cotton selling houses present more of a problem for the manufacturer than the cooperatives, and in transactions with them group buying certainly would not be a handicap.

One of the most important benefits to accrue from taking up cotton in the South would result from the closer contacts and acquaintanceships between the mills on the one hand and cotton handling factors on the other. Grower, ginner compress man, factor and merchant would gain a more accurate knowledge of the needs and problems of the mills and the mill representatives of those of the former. A few years of such contacts would result in greater progress in breaking down the barriers that cause misunderstanding between the cotton grower and the manufacturer than could be brought about by a half century of occasional conventions and conferences. Taking up cotton in the South, therefore involves not merely a change in a method of buying, but is a movement that by bringing about closer contacts between the grower of the South and the manufacturers of the South and North may establish a consciousness of interdependence that should go far in increasing the leadership of this country in cotton growing and manufacturing.

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POWER, ENGINEERING AND MAINTENANCE

Many Developments to Improve Power, Engineering, Maintenance, and Repair Service

Advances in Power, Heating, and Ventilating Equipment—Control of Corrosion and Waste

WHILE manufacturing executives have been busy during the last year with problems of production and distribution, engineers have not been idle. There have been important advances affecting the mechanical department which reduce power, maintenance, repair, and manufacturing costs. Power units are being made more efficient; improvements are being made in auxiliaries which lower costs and lengthen service; machines and buildings are being constructed to reduce the cost of upkeep; and developments are in process to lower the waste of heat and textile materials. While many of the advances recorded are not ready for immediate application in the textile industry, they show the lines along which executives and mechanical superintendents can look for improvements to keep plants fit to make profits.

DURING 1927 there were many achievements in the design and construction of power equipment. The tendency is still toward higher steam pressures and temperatures. Steam temperatures of 900° F. are found, but the great problem is to find metals that will successfully withstand the tremendous stresses incidental to such high degrees of heat.

Boilers and turbines are being constructed in larger units. Structural steel is replacing the heavy castings used for framing large generators, and due to this fact the generators can be shipped completely assembled and wound. The only limit to the size of units thus made up seems to be the difficulty of finding freight cars strong enough and large enough to carry the assembled parts.

A very interesting feature developed in 1927 in the construction of large generator rotors is in connection with the use of the huge, long, through bolts which bind the sections together. In the former method of assembling, great force was needed to screw up the nuts of these bolts. By the new method a bolt-puller stretches the bolt after it is in place; the nut is run down by hand; the bolt-puller is released and the bolt contracts in length, thus clamping the sections together. There is no galling under the nuts, no torsion in the bolts and a more uniformly tight rotor.

Cooling and Ventilating

One problem of the larger units is the proper cooling and ventilation of the generator windings. In the commonly used open circulation system there has always been trouble from the accumulation of dirt, moisture, and oil on the field and armature coils, which has necessitated frequent cleanings, an expensive procedure on a large unit. Closed systems of circulation are now being used in which the air (or gas) is recirculated.

By this means all dirt and moisture are kept from the coils, and in addition the heat removed from the coils is recovered and utilized for heating the feed-water. This last feature, and the similar recovery of the heat from the oil that circulates in the turbine bearings would seem to be the last word in the utilization of waste heat in the power plant. The use of hydrogen gas for the cooling and ventilating medium, in place of air, is being studied by both General Electric and Westinghouse. The problem here is to properly seal the glands around the shafts so that no hydrogen escapes or air enters.

Stage heaters for adding heat to the feed-water are being widely used in place of the old-fashioned economizer. The steam is bled from the successive stages of the turbine. The economizer may not wholly pass out of existence, however, but in modified form may serve to preheat the air required for the coal in the furnace.

Motor-Driven Auxiliaries

Motor-driven auxiliaries for the boiler and turbine rooms are now being largely used in preference to the steam-driven type. With the latter there are always unaccounted losses that serve to raise the amount of steam used by such equipment to 10 to 12% of the total amount generated. With motor-driven types this consumption can be reduced to 5%.

Despite the popularity of pulverized coal the stoker seems to hold its own. Larger boilers necessitate larger stoker units which must be able to burn increased amounts of coal per sq. ft. per hour. It is predicted that this amount will soon be raised to 150 lbs., which means 500% rating.

The use of preheated air, which is of great advantage with both stoker and pulverized coal, demands however in the case of the former a different tuyere block than is ordinarily used. For the same weight of air the volume, by reason of the higher temperature, is much larger. The block must therefore have more and larger openings through which the air can pass. Fig. 1 shows special Westinghouse tuyere blocks for use with preheated air.

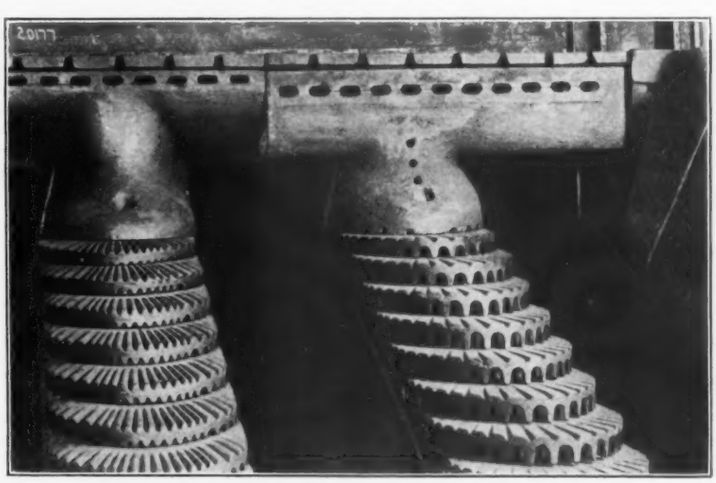


Fig. 1. Stoker Tuyere for Preheated Air

Protection of Furnace Walls

With the increasing use of pulverized coal and larger stoker units has come the need of better protection of the furnace walls from the high temperatures and destructive erosive action due to combustion. At the same time there has been considered the most advantageous method of utilizing the great amount of heat liberated within the confines of the furnace. Several types of walls are now in use in the larger plants other than the ordinary refractory wall.

First, there is the air-cooled refractory type in which the air required for furnace combustion passes through spaces behind the brick or tile on its way to the furnace, and thus exercises a cooling effect on the wall, lessening the fusion and lengthening the life of the wall. At the same time the air becomes heated which aids the combustion. Second, there is the all-metal water-cooled type, consisting of 4-in. boiler tubes in series with the boiler and through which the boiler water circulates. Metal fins are welded to the tubes in such a way that a continuous metal surface of fins and tubes is exposed to the radiant heat of the fire. Third, there is the radiant heat superheater type of wall in which the superheater tubes serve as the wall, thus supplementing the regular convection heat superheater that is installed in the upper passes of the boiler.

Lastly, there is the water-cooled refractory-faced wall which consists of 3¼ in. tubes in which the boiler water circulates. These tubes are not directly exposed to the furnace heat. In contact with the tubes on the furnace side are cast-iron blocks which have cast on them on the surface next to the fire a refractory material. This latter serves a double purpose. It protects the cast-iron block from a too high temperature and at the same time it does not unduly chill the furnace gases as do, in the opinion of some combustion experts, the all-metal types of walls. At the same time the water circulating in the

tubes serves to conduct away the heat from the refractory material, and thus the latter is more durable. A metal-paste filler is used between the tubes and the cast-iron block in order to give better contact. Fig. 2. shows the construction of a well-known make of water-cooled wall. Some boilers are equipped with a combination of two or more of these various types of walls.

Power as a By-Product

The feeling still persists that power

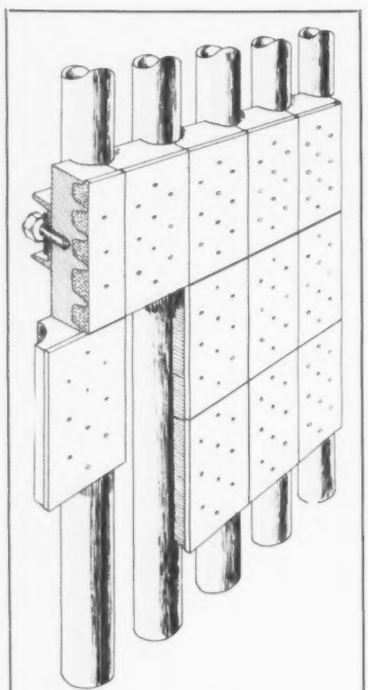


Fig. 2. Water-Cooled Furnace Wall

should be made a by-product of coal and not the ultimate end. When we consider the vast amount of industrial and chemical products that can be manufactured from bituminous coal, for instance, and which are now in a great measure being lost forever where coal is burned under boilers, it must be admitted that the argument for making power a by-product, and thus utilizing our vast stores of soft coal to better advantage, is a forceful one. One of the objects in mind is to find a method by which the valuable by-products of the coal can be recovered and a profitable market for the same created, and at the same time produce a cheaper and more nearly smokeless fuel for power-plant use.

Investigations are being carried along on two principal lines: one of the low-temperature carbonization of coal which produces gas, tar, and coke; the other the hydrogenation of both coal and oil. In this second method the coal is subjected to the action of hydrogen at high pressure (100 atmospheres) and high temperatures, always in the very necessary presence of a catalyst. The result is a complete liquefaction of the coal, which liquid product is then distilled producing motor fuels, Diesel oils, lubricating oils, fuel oils, gas, ammonia, pitch, and ash.

Crude oil is being similarly subjected to high-pressure processes but the experiments are in too early a stage to predict commercial results. This study of coals and oils promises to be one of the leading investigations of the chemical engineering world within the next few years. As usual Germany seems to be taking the lead, although the Standard Oil Co. is doing much in this country insofar as oil is concerned.

The Diesel Engine

The use of the Diesel engine is increasing in all classes of industry, including textile manufacturing. The principal attractive features of this form of prime mover are its production of power at a very low cost, both in small and large units, its low operating costs, and its minimum maintenance charges. The Diesel engine is of value as a standby unit for emergency use when steam power or purchased power fails. The only requirements for service are the engine and a supply of oil.

Probably no industrial processes of fabrication are making more rapid progress than gas and electric welding. As a means of repair, the great value of the former has long been recognized, and its use is steadily increasing. It is in the employment of welding for the fabrication of new construction, however, that such wonderful extension has been made. Perhaps the most surprising instances of such use are in the construction of large steam turbine generator units. A pair of 94,000 KVA generators being built for the Hell Gate Station are of structural steel welded design. Due to this fact the generators will be shipped completely built and wound. This form of construction eliminates all field erection, and permits of better assembly and adjustment by reason of the work being wholly done at the factory. At the same time it means that large castings need no longer be used, and this greatly reduces the weight of the units. Bed plates for all sizes of generators and synchronous motors are being fabricated of welded steel.

Welding is also being used in the construction of bridges, and even entire buildings that are built of structural steel. At Chicopee Falls, Mass., the Boston & Maine Railroad has erected such a bridge; and at Sharon, Pa., the Westinghouse Co. has constructed a factory building, 70 x 220 x 80 ft., with floors designed for loads of 300 lbs. per square foot. If riveted construction had been used the weight of the frame would have been 885 tons, but as built of welded material the weight is but 790 tons, a reduction of about 11%. The welding process also enables the engineer to easily reinforce any riveted construction that shows signs of weakening.

Interior Painting of Mills

It has been persistently demonstrated that the periodical painting of mill interiors is a profitable habit to form. The extra illumination afforded by this simple means is profitable in many ways. It increases production, reduces seconds, promotes the health and happiness of the operatives, and reduces the hazards of employment.

During the past few years there has been little change in the means employed for the purpose. Mill white, flat wall paint, and special products of a similar character are employed as heretofore, but in increasing quantities, showing that those interested are gradually learning the economizing value of the practice. Lithopone and zinc oxide are the principal pigments

Fig. 3. Unit Heater Suspended from Ceiling in a Hosiery Mill

used in these products, though titanium oxide is appearing in some of the formulas. Lacquer which has shown such astounding advances for certain uses has as yet scarcely invaded this field.

While the consumption of paint and varnish as a whole will probably show little if any increase for the year, this will not hold good for the special products used, the manufacturers of these materials reporting increased demand. The growing use of the spray-painting machine in this class of work may partly account for the increased consumption. This method permits the painting to be done very rapidly, often without interruption of work, and very economically. Any mill-owner who adopts the practice will find that it pays to repaint at regular fixed intervals, if merely to maintain his volume of output.

Overcoming Corrosion

The efforts to overcome corrosion continue undiminished. Corrosion has been called the greatest conflagration in the history of all industry. Fire as we commonly know it is the uniting of various materials such as wood, paper, cotton, etc., with oxygen, and the result is a violent and visible evolution of heat, the end being the complete destruction of the materials involved. The only difference between this class of conflagration and that of corrosion is that the heat developed is not visible or violent, but at the end the destruction is just as complete. It is estimated that this destructive agent is costing the United States $575,000,000 annually, and unlike all other fire losses there is no insurance.

Corrosion in steam boilers has always been a cause of much concern to power plant engineers. This has now been stopped to a great extent by the use of the deaerating heater. The corrosive action of feed-waters has been largely due to the dissolved oxygen contained in the air present in the water. The heater frees the water of this oxygen and the destructive action ceases. This is not wholly true, however, because it has been found that there is a certain production of free hydrogen and oxygen from ionization.

While on the subject of boiler feed-waters it might be well to cite several new developments in the search to obtain better conditions inside the boiler. Boiler scale is now prevented from forming by a number of methods. Among these are the zeolite processes and the use of the sodium phosphates. A special committee of engineers is working on problems of research relative to the treatment of feed waters and more definite results will be forthcoming.

The introduction of the metal chromium into steel mixtures has produced the "stainless steels" which are practically rustless, and these are finding increased uses. Chromium is also being used for electro-plating in a manner similar to nickel. In fact, this metal is attaining a very important position in the industries by reason of the non-corroding properties that it imparts.

The protection of structural and tank metal by proper and frequent painting, using the rust-inhibiting and acid-resisting paints is becoming more general. The slogan adopted by the paint industry, "Save the Surface and You Save All," is as applicable to metal as to wood. Systematic inspection and re-coating is the only satisfactory solution of this special problem. And here again it is well to note that chromium plays an important role; basic lead chromate is one of the best rust-inhibiting coatings that can be used, particularly for the priming coat.

For special use in tanks for containing acid or other corrosive liquors, the use of special alloys such as Duriron, Tantiron, Aterite, Monel, and other non-corroding metals serves to keep down the repair and renewal costs. Lead-clad sheet steel has in many instances replaced the ordinary galvanized iron and tin-covered sheets for such purposes as conductor pipes, gutters, fire-door coverings, air-ducts, etc.

The "Parkerizing Process," while perhaps not yet utilized to any great extent in the textile industry, is finding much favor among manufacturers of machines, instruments, and tools where it is desired that the parts be rustless. The parts are immersed in

boiling water to which has been added a certain amount of chemicals, the resulting action of which is to form on the surface of the metal a non-rusting film of iron phosphate which is permanent. Moreover, this coating can be varnished, lacquered, or painted over, and really serves as a bond which fastens the paint more firmly to the metal. Typewriter and adding-machine parts are all "Parkerized," as are telephone instruments and many automobile parts. There is no reason why the process cannot be applied to many pieces of textile equipment where the non-rusting feature would be of value.

Unit Heaters

The use of unit heaters for the heating and ventilation of factory buildings is increasing. This type of equipment has much to recommend it. Each unit consists of one or more sections of heating coils and a motor-driven fan. The air intake is so arranged that the air can be taken either from the outside or from the room; or a combination may be used. The units come in a number of sizes. Among the many advantages may be listed the following: economy, effectiveness, and flexibility; heat at short notice at any particular section; low initial and operating costs; compactness; light weight; and ease of installation.

In addition, this type of equipment is very useful in tempering outside air that is admitted to rooms to make up for air that is being removed by exhaust fans. In this connection unit heaters find much favor in textile dyehouses and finishing rooms. The air can be introduced into the room at whatever temperature is necessary to prevent fogging and yet not overheat the room. Another use for this equipment is to cool mill rooms in summer, cold water being circulated through the coils. Still another use is to operate only the fan, for the purpose of increasing air movement and giving a cooling effect.

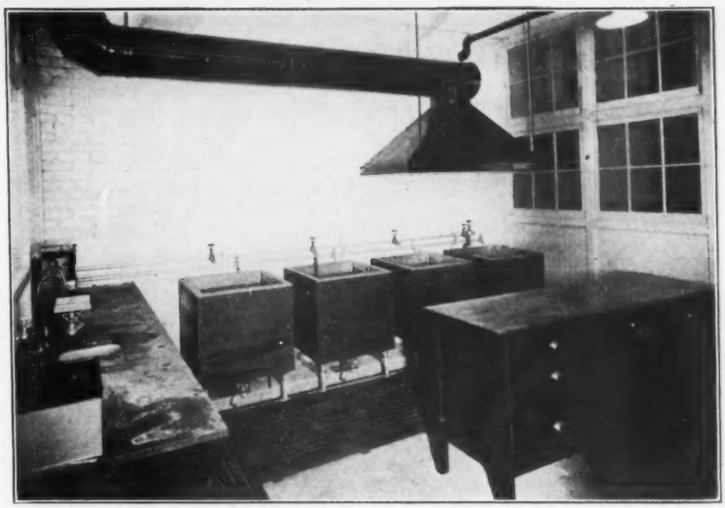


Fig. 4. Corner of Treatment Research Room in Silk and Rayon Yarn Mill

Wood Preservatives

Mill engineers are realizing to a greater extent than ever before the necessity of using treated lumber for floor and roof construction, particularly in rooms and buildings where there are excessive moisture conditions, either from steam or by reason of a high humidity being carried. A somewhat new process, new at least for this country, although it has been used in Germany for twenty years, is one in which the wood is immersed first under a vacuum and then under a pressure of 125 lbs. in a solution containing di-nitro phenol, sodium fluoride and potassium bichromate.

There is no discoloration of the wood; the surface can be painted, varnished, or stained the same as any natural wood, and there will be no corrosive action on any metal that is inserted in or is in contact with the wood. Another claim is that a cheaper grade can be used; that it is not necessary, for instance, to specify all-heart wood yellow pine, since the cheaper "dense" grade will answer and when thus treated will give equally long service. This one fact would mean a considerable reduction in the cost of a building.

Reduction of Wastes

No review of any phase of modern industry is complete without reference to what is perhaps one of the most important aims today of manufacturing executives—the reduction and elimination of industrial and manufacturing wastes. A very hopeful and encouraging note was sounded last April when President Greene, of the American Federation of Labor, pledged himself and his organization to this campaign. Samuel Gompers, previous to his death, had assured Secretary Hoover of his interest in the matter.

If the cooperation of employes can be obtained, a great advance will have been made in one phase of the waste problem, the elimination of "seconds," that tremendous consumer and destroyer of profits and the despair of all manufacturers of textile products. When we consider that "seconds" carry the same cost of raw material, the same manufacturing costs, and the same overhead charges, yet must necessarily be sold at a price usually less than cost, it will be realized what a tremendous increase of net profits would automatically take place could these "seconds" be eliminated. Labor as well as capital would greatly profit thereby.

Heat in some form is probably the greatest item of waste, not only in textile mills, but in all industry, and efforts to recover it to the utmost continue. In the textile industry proper we find that much heat is lost in the form of hot water and other liquor discharges from the various scouring and dyeing operations. In some plants a considerable quantity of this heat is recovered by passing the discharges through heat interchangers. New water going to the machines circulates through pipes around which the waste hot liquors are flowing. Heat from the latter is taken up by the former and an appreciable saving results. Each case must be handled in a manner best suited to obtain satisfactory results. No general layout can be recommended for all cases, but the principle involved is well worth an investigation in every mill, be it small or large.

Latest Statistics Show that the Textile Industry Is Using More Motor Trucks

Flexibility of Transportation an Important Factor— Trucks Have Supplemented, Not Displaced, Railroads

By Edward F. Loomis *

FOR the third successive year, production of motor trucks has exceeded 450,000 units. Estimates indicate that 464,000 trucks were made and sold in 1927. Truck registration is now estimated at 2,985,000. Wholesale value of trucks and truck parts has been averaging about $500,000 a year during the last three years. Continuity of this tremendous growth in truck use constitutes strong testimony about how dependent the shipping public has become upon the economy and flexibility of the truck as a transportation tool.

In the textile field, the actual growth of truck use has been very great. Some three years ago an estimate was made that there were about 4,000 trucks employed in manufacturing and merchandising textiles. An actual survey of over 1,300,000 trucks all over the country resulted in the discovery of 6,160 trucks owned by concerns in the textile trade. This count of course made no allowance for trucks hired from other owners to carry textiles.

Now Own 10,000 Trucks

If we can assume that the averages established in this survey may be applied to the present estimated registration of 2,985,000 trucks in the country, we would then have a total of 14,212 trucks used by the textile trade on January 1, 1928. Inasmuch as the survey was based on information obtained from city directories, it is doubtful whether actual count would result in so large a figure; it is probable, however, that we can safely assume that at least 10,000 trucks are owned by the textile industry.

Of the 6,160 trucks found by the nation-wide survey to be owned by textile concerns, 622 were under one ton, 2305 were of approximately one ton, 1005 were over one ton and under 2½ tons, 726 were 2½ tons or over, with the rest unclassified as to weight. Proportionate increases in the numbers of trucks in each of these weight classifications are to be assumed under the estimates based on complete registration.

Reasons for the truck's popularity in the textile business do not differ in important respects from reasons for adoption of the truck within its special sphere by all lines of industry. It is sufficient to emphasize the point that these reasons frequently differ, and also frequently a mixture of reasons is the impelling factor.

A few years ago there was some disposition to believe that the motor truck would ultimately displace the railroad train. Very few hold to this theory at the present. Yet there are countless owners of trucks and users of truck service who are not patronizing the rail service because of economy of money or time, convenience or sheer necessity in the light of the availability of flexible transportation by truck.

A vast store of knowledge about truck transportation has been released through surveys conducted by the United States Bureau of Public Roads and other authorities, as a result of which we are able much better to

*Secretary, Motor Truck Committee, National Automobile Chamber of Commerce.

assay the place of the truck in the general field of transportation. Estimates based on new statistics show that the 2,985,000 trucks in service today are owned by more than 2,000,000 individuals and corporations. Traffic studies indicate that 83% of these trucks are owned by shippers for their own private use; 11% by concerns which contract to provide truck service of a definite, specified type, and seven per cent by professional truck haulers, some of them over fixed routes, on regular schedules, and at fixed rates as common carriers.

No Organized Competition

These statistics shed much light on the old rail-truck controversy. In the first place they establish the fact that there is practically no organized truck competition to the rails, the trucks being primarily agents of private business. They also make it clear that the railroads cannot hope to restrict the truck business by foisting hampering legislation of truck common carriers, since the railroads own so few trucks.

This development of a great transportation agency as predominantly a private carrier business is in sharp contrast with all American experience in transportation. Railroads and trolley lines quickly merged in compact, common-carrier enterprises. After 25 years, truck service is provided by common-carrier truck operators only to an infinitesimal degree.

It seems to be clearly established that the truck has no place in the long-haul field of mass products. It cannot compete in this field against the railroad car. But it can and does act as the primary agent of collection and distribution of freight.

Not lending itself to the long haul, the truck does not tend to merge into big systems of through lines and feeders. It probably will never do so unless the railroads enter the field and extend the scope of their activities to include the truck. Even if this were to come about, the exactions of common-carrier service, with limitations of time, speed, and cost imposed by uniformity, carrying out schedules, and the like, rob the truck of the flexibility which has made it so popular. Even if goods could be carried by trucks under a common-carrier system, there are scores of reasons why private business would insist upon private truck use.

Trucks Supplement Railroads

The manufacturer, to whom delay in obtaining raw materials or in transferring materials from one factory to another means closing down part of his plant while overhead mounts, is not very much concerned with a differential of a few cents a hundredweight in the cost of getting his goods moved.

The grocer, who keeps his stocks and inventory low and gets 12 or 15 turnovers a year of his capital as compared with three or four before the day of the truck, will not keep his shelves empty for a slight saving in trucking costs.

The live-stock operator located within trucking radius of one of the big live-stock markets, who listens daily over his radio to reports of live-stock prices, wants to get his animals to market when prices are firm or high. He certainly prefers sending them by truck at a definite time to shipping them and not knowing whether he will get high or low prices.

Another illustration of the general effect of the truck on transportation is found in increased daily car mileage obtained by the railroads. For the first eight months of 1927 the average daily freight car movement was 30.9 mi. per car, as compared with 24 mi. a day during government administration. Trucks are keeping terminals free from congestion and are assisting in the more rapid unloading of full cars.

No progress was made at all last year toward increased regulation of the truck by the states or federal governments. No new laws were passed, and nowhere did any outspoken demand from the public or shippers manifest itself. Investigation of the need for federal regulation of trucks was begun in 1923 by the Interstate Commerce Commission. This body has not yet reported its findings, although hearings will soon be held at Washington, and further arguments will be heard.

Southern Textile Village Planning Requires Knowledge Of Social Conditions and Engineering Practice

Trend of Future Developments—Outstanding Examples of New Villages and Redeveloped Communities

*By E. S. Draper **

THE problem of industrial village planning in the Southeast which, to a large extent, centers around the southern textile mills, may be summarized briefly as the intelligent application of sound principles of town planning to southern industrial requirements. Before discussing in any way the details of planning, or the relation of such planning to the general factors, I want to introduce the subject briefly by a reference to southern conditions.

The Southeast is passing from the agricultural to the industrial era. Prior to the twentieth century, although there were a good many industries in the Southeast, it would undoubtedly be classified as agricultural, and whole sections now would keep the same classification. Yet the tremendous growth, largely in the Piedmont section of the Southeast, along many industrial lines would justify the observer in stating that the Southeast as a whole was well along in its industrial era. The fact that there are over 1,200 textile mills in the South at the present time employing several hundred thousand workers—mills of which the greater number are concentrated in three states, North and South Carolina, and Georgia—will give an idea of the tremendous progress along the lines of textile manufacture that the Southeast has made.

The industry of textile manufacturing, which is not only the most important in the South from the standpoint of economic investment, but also in number of plants, is the only industry as a whole in which housing the employes in attractive villages is considered as a necessary part of plant operation and is capitalized as a part of plant investment. The coal mining industry and furniture manufacturing for reasons associated with their own industry, pay much less attention to providing attractive villages for their workers; in the case of the former, because of the shifting nature of coal mining operations, and the latter, in that wood working of all sorts is usually closely associated with existing towns and cities.

The textile mills, despite the fact that a number of large mills are located in the cities—or rather that the cities have grown out and taken these mills with their villages into their corporate limits—to a large extent either prefer to develop their own textile towns, or to select a location in a country town, where housing facilities usually do not exist to a sufficient extent to take care of the workers. Therefore, the necessity for building and maintaining employes' houses is quite as important as building and keeping up the mill and machinery. The workers' houses in the village development are thus a complementary part of the mill, without which the mills would not have nearly as favorable manufacturing conditions. Fully 95% of the southern textile mills have built and maintain their own villages.

Industrial Growth

To one living in the Southeast, it seems but natural that the industrial growth which has brought about these conditions will continue. Tremendous supplies of water power, together with a well-developed and interlocking system of available power distribution, a large range of readily available raw material, and the greatest supply of crude but efficient labor of any section in the country, represent a combination which is steadily but surely drawing manufacturers to the Southeast. Coupled with this is a large, steady growth of population, which means a constantly expanding local market for all materials that can be manufactured.

From the summary of conditions that I have given above, it is easy to see that textile manufacturing is and will continue to be an important feature of the Southeast's construction activities, and that the problem of village development which, so far, has been a proprietary development,

West Point, Ga. View of Park from Lanett Mill

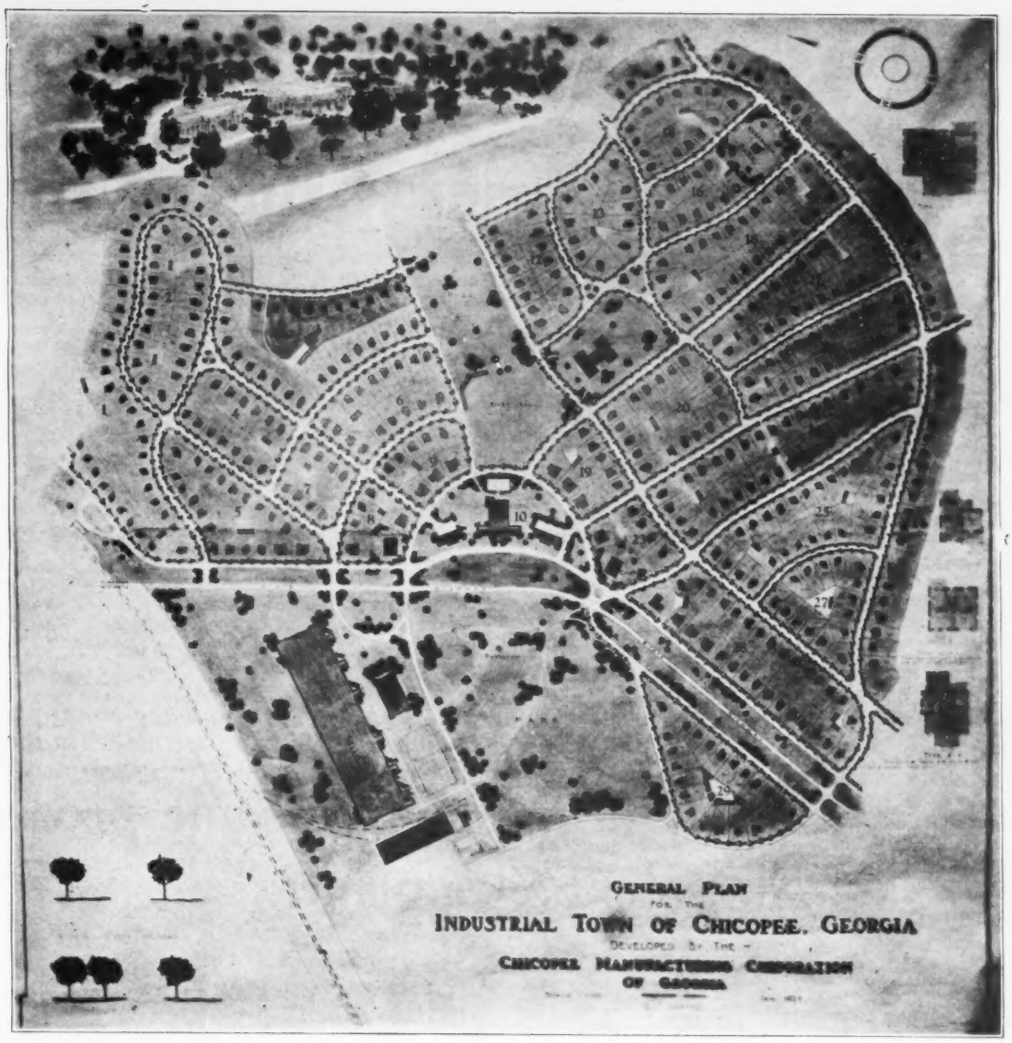
* Landscape Architect and Engineer, Charlotte, N. C., and Atlanta, Ga.

in most instances by the mill owners, is and should continue to be an important field for the landscape architect.

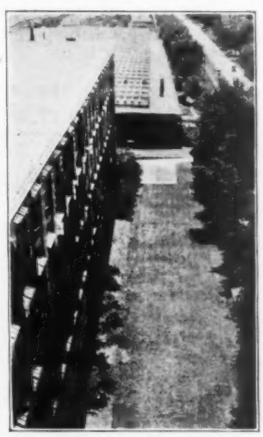
I have mentioned above one reason why the textile mill village development at the present time is of necessity a paternal or proprietary development. I want to discuss why I consider that this has been, so far, an advantage, not only to the mills, but to the country at large and the workers themselves. The great source of mill labor in the Southeast is from the southern Appalachian Mountains, where there live at the present time over three million white people, homogeneous in race, the purest group of English and Scotch descent in the country to-day, with the highest birth rate in the country, wresting a meager living which only provides the barest necessities of life. These people, many of whose ancestors centuries ago were mill workers in England, are anxious to send their sons and daughters to work in the mills, earn a better living, and become more a part of the country in which they live. These people come from mountain cottages, in many cases cruder than the cottage illustrated, without any conveniences, having been sufficient unto themselves, and growing or making the better part of what they use.

Usually intensely individualistic, they retain the love of their mountain cottage, and dislike living under any conditions which do not give them the right to live in a single-family home and control the plot of ground about them. Experiments of southern mills with two-family and group houses in the past have been unsuccessful—more of this later, however, under the discussion of features of village planning. To bring such people into a mill village of a fairly attractive type is like advancing them one or more generations in the standards of living. Consequently, it is a case of necessity for the mill owners to set the standards for their operatives.

This does not apply to every operative, as a comparatively small percentage come direct from the mountains to any one mill village. Usually the majority, of necessity, from the standpoint of successful manufacture, must have been operatives in other mills. Those mills nearest the mountains or in the mountains usually have the greatest problem in training unskilled operatives, compensated to a certain extent by the payment of lower wages. For the reason that the operatives enter on a different plane of living, it would hardly have been possible under other than paternal conditions for the standards now established in textile villages to have come into effect; not that the operatives are backward about adopting new ideas, as it is said that they pick up the machine work of the mill very quickly—in direct contrast to the negroes, who have been a failure at mechanical work in southern textile mills—and similarly they adapt themselves to the houses and village improvements which are provided for them.



If we consider therefore the tremendous improvements and increase in standards of living in southern textile mill villages during the past decade, it is hard to believe that such a gain could have been accomplished under any other than a proprietary plan. The time is coming, however, when further advancement in the social order and in living conditions will have to be made by the people themselves; and the majority of the mill owners are anxiously hoping that the standards of living which have been, more or less arbitrarily, imposed on the operatives will have brought them to the point where they can carry on themselves, take over the government of the villages, and gradually develop into proprietors themselves.



Artificial Rain at Lanett Mill; A pipe system installed on the roof sprinkles the walls and English ivy growing on them, and also, carried by the wind, sprays out over lawn and shrubbery

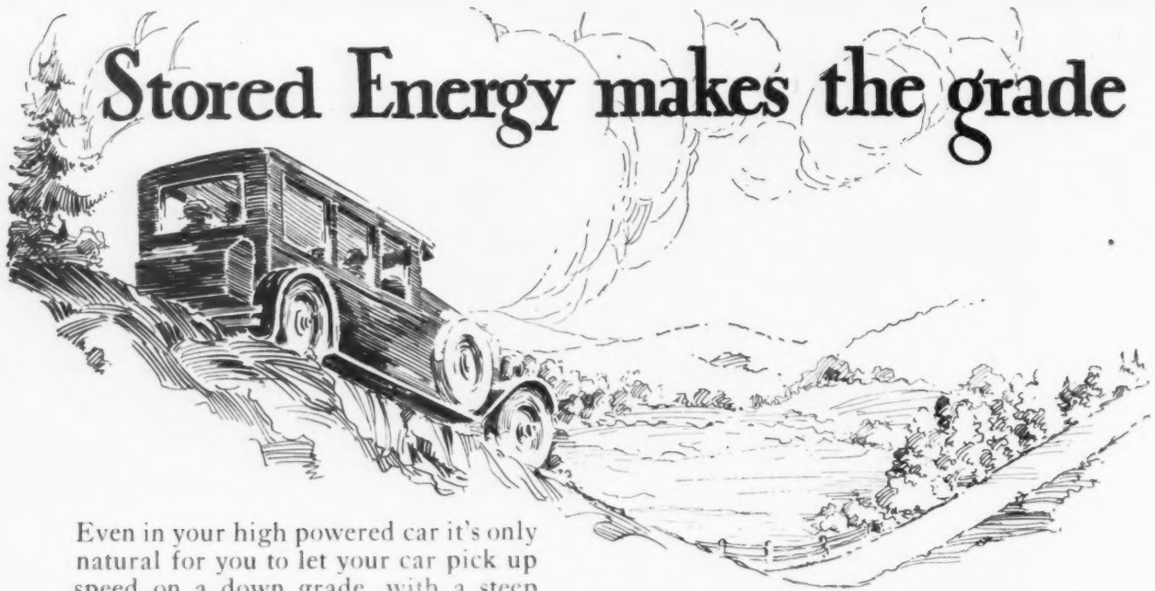
So far, the several schemes of village management by the operatives themselves, which have been tried out at a number of mills, have not been entirely successful. Judging them purely from a landscape architect's standpoint, I would say that the results of village management and improvements are not as good as where the initiative rests in the mill owners. If this proprietary scheme can develop into something like the English garden-city idea, when the people are ready for it, without having to go through the era of real estate speculation, we shall have witnessed a remarkable transition. The mill owners will be only too glad to write off the cost of maintenance of the village whenever the operatives have developed to the point of assuming the responsibility, but they will never consider allowing speculators to get control, either from the standpoint of mill operation or the welfare of the operatives.

Village Requirements

In the planning of a new southern textile village, the general requirements of planning are practically the same as any lotting or subdivision development. Gently sloping topography, adequate to take care of drainage and gravity water-supply, is an advantage over either flat or mountainous situations. A certain percentage of wooded area is always important in the South. It is quite important that the streets and pathways be laid out to give direct and adequate circulation to and from the mill-village center, and to the adjoining town or city. Practically all the workers return to their homes for the noonday meal, and the majority of them walk, except in the larger textile communities where houses may be located at some distance from the mill, so the matter of circulation is an important feature.

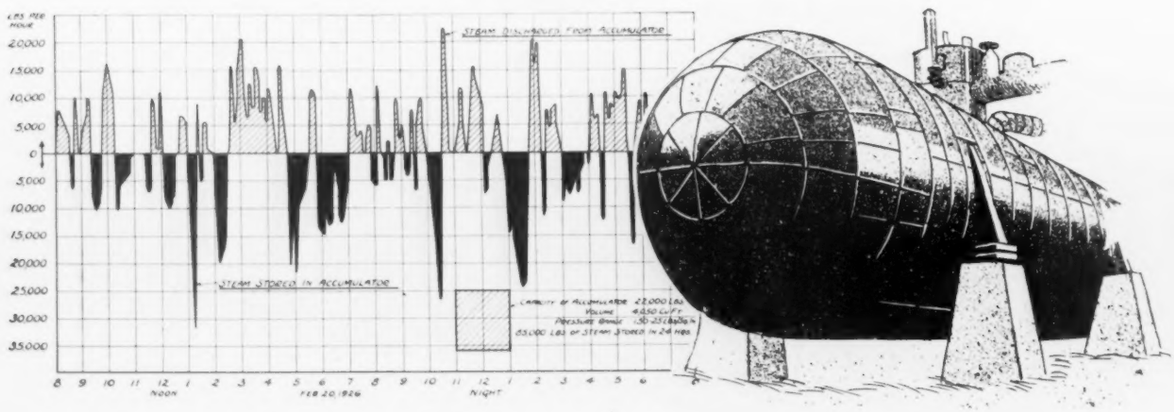
This brings us to the third and very necessary essential—that is, the location of the buildings. The homes of the workers are usually of the bungalow type, from three to six rooms in size. A general store of some size is usually built, with the second floor devoted to lodge hall and necessary offices. The villages must have their own churches, even when they are close to a city or town, and, as the

Stored Energy makes the grade



Even in your high powered car it's only natural for you to let your car pick up speed on a down grade, with a steep climb right ahead. You do it to store energy—to add to the power developed by the engine—to help pick up the sudden heavy load to be carried when the climb begins.

Why not apply the same procedure in your boiler plant?



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Methodists and Baptists are usually present in about equal numbers, and greatly outnumber other denominations, two churches of this type are usually to be found in every village of over one hundred houses.

Of late years the mill management has realized the value of education, and the schools to be found in the textile communities are quite equal—and sometimes superior—to the schools in town. A hotel or boarding-house, or both, should be located close to the village center. A community building of some sort, ranging from a bungalow to a very elaborate building, is usually provided for each village. The idea of group garages, housing about one car for every two or three houses, has been pretty generally adopted, to do away with the unsightly sheds and shacks which would otherwise be erected in the yards. Almost invariably open spaces devoted to and equipped for playground purposes, with the inevitable baseball diamond for the older boys, are to be found in each village.

This is a summary of what is included in practically every textile village of any size. These improvements of course vary in character, according to the money expended on them. During and after the war a great deal of money was spent in community improvements in most of the southern mills. As for the utilities; electric lights are universal because of the fact that there is an abundance of power to operate the mills. The majority of the villages have both piped water and water-carried sewage, although there are some villages that still lack plumbing in the houses. The newer villages have houses usually wired from the rear, with pole lines down the rear lot lines, which makes the matter of tree planting on the streets much easier.

In the matter of street improvements only the better villages have every street paved; the majority of the village streets are surfaced, however, and curb gutters and storm drainage are a necessity in many sections on account of soil conditions of the heavy clay type, which mean heavy surface run-off during all rains. Probably concrete sidewalks are the most nearly universal of any street improvement, because of the amount of walking done in the village and the advisability of keeping dirt out of the mill. Tree planting in the strip between the sidewalk and roadway is also universal, although the type of tree planting has not been always what it should be.

This is a skeleton outline of the points to be considered in the design of a textile village and a brief summary of the present existing conditions. From a landscape standpoint there are, however, many detail problems and viewpoints which it would be well to discuss briefly at this point.

Street Arrangement

From the standpoint of traffic—most of the traffic being workers and their families walking to and from the town center and mill—a radial scheme, with streets leading to and from the mill and community center to all parts of the village, is theoretically ideal, although rarely ever practical on account of topographic features, existing streets or highways, railroad, etc. For this same reason the mill located in the center of the village, with a highway and railroad approach which interferes as little as possible with the village layout, occupies an ideal situation with respect to its relation to the homes of the workers. It is possible for a small mill to be located at one side of the property and not cause any great inconvenience to the workers, or any great expense from the standpoint of village maintenance; but where the plant is of sufficient size to require 200 or more houses, it is safe to say that the rear of the village will not be as desirable to the workers on account of distance away from activities, both of work and play.

There is always a conflict with the railroad line in instances where the mill is located within the village; although if this be a spur line from the main line of the railroad, this problem can be overcome without difficulty Where the mill is located on a through railroad line, it is well to depart from the theoretical scheme of the mill as the center of activities, and develop the village in so far as possible on one side of the railroad with the mill at the end of the property. Underground and overhead crossings for foot traffic, both on highways and railroad, rarely serve their purpose unless the topography is such that workers are forced to use them. Thus it can readily be seen that the matter of actual location of the mill is a problem in which the landscape architect as well as the mill engineer should be concerned.

The topography and block depths, of course, are determining factors in the actual location of the streets. In the older mill villages, where neither the sewerage nor the storm drainage was cared for, drainage areas, where possible, were located in rear yards, with the houses and streets on ridges. This always resulted in a rear yard situation of constant washes and unsightly eroded areas. In general, I consider it better practice, where the houses are sewered, as is usually the case, and where street improvements adequate to take care of storm water are provided, to locate the streets so that they serve as natural drainage carriers. Of course, with the elimination of outhouses, there is no longer the objection which was raised in the old days to this scheme of development; that is, the fact that the outside toilets would be located on higher

LAURENS COTTON MILL VILLAGE, LAURENS, S. C.

Primitive Conditions Before Development at Laurens

New Stucco Bungalows at Laurens, All Street and Sanitary Improvements

GLENN-LOWRY MILL VILLAGE, WHITMIRE, S. C.

Street in Glenn-Lowry Mill Village Before Improvement; Whitmire, S. C.

Above Street with Concrete Sidewalk, Curb Gutter, Storm Drainage, etc., as a Part of the General Program of Improvements

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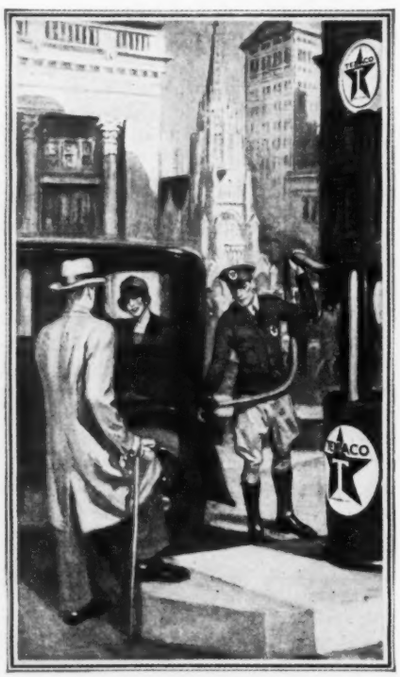

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ground than the houses. I am mentioning this point to show that modern improvements in the textile village have changed the scheme of planning from that followed in the old days.

The width of the road pavement, I feel, should be kept to the minimum; and wherever possible adequate sidewalk provision should be made as a part of the street section, but separate from the roadway on account of the danger to the people walking in the roads and the children going to and from school. The ideal solution of the improvement question on minor streets of a mill village is concrete sidewalk, curb and gutter—either rock or concrete, separated from the sidewalk by a tree planting strip—with necessary storm drainage to take care of surface water; and a road surface of an inexpensive but binding type, such as the so-called Catchinite surface, which is a three-coat surface, tar in the first coat and asphalt in the other two, which has proved most successful on North Carolina State Highway work for minor roads, and which is being laid now at a cost of about 40 cents a square yard.

Gravel or sand-clay surface on the average village street is perfectly satisfactory from the standpoint of traffic, but usually requires so much upkeep, unless the grade is very flat, that a binder of some sort is economical in the long run. For minor village streets we usually use a 40-ft. section, 5-ft. walkway, 5-ft. tree-planting strip, and 18-ft. roadway, the latter being ample for vehicular use if the curbs at street intersections are made with large radii.

Typical Houses

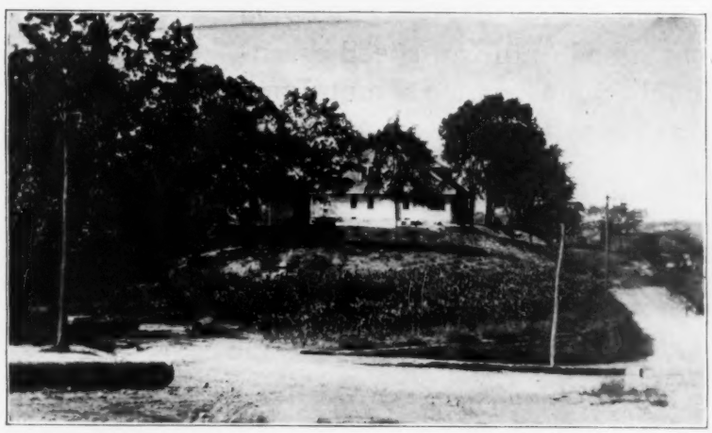
I have previously mentioned the typical mill village bungalow house. This normally includes hallway, kitchen, dining room or dining alcove, living room, bathroom and several bedrooms in the six-room house type. In the four-room house the hall may or may not be included and the dining room is usually a living room as well, leaving besides the kitchen two bedrooms. The bungalow or cottage type of house is most suitable, not only from a climatic standpoint, in that the rooms on the ground floor are cooler, but because of the fact that the village people, on account of having lived in mountain or rural cottages, have never been accustomed to climbing stairs and will not do so when it can be avoided.

Owing to the fact that no cellar excavation is ever provided, except for more expensive houses, and heating requirements are taken care of on the first floor, the one-story house is a practical proposition; whereas in the North, even if the bungalow were suited to other conditions, the added cost of basement would increase the

PACOLET MILL VILLAGE, PACOLET, S. C.

Typical Street View, Showing Employes' Bungalows

Parkway, with Overseers' Houses Facing Park



Site of Neighborhood Park Opposite Village Hotel, 1920

The Same Park in 1927

Houses for Department Heads and Office Men

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Type TZ
with ball bearings

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Type TZ

Ball bearing type if you want the best. Type TZ motor is illustrated.

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Identical with Type TZ except that this type has sleeve bearings. Therefore, somewhat lower in price.

BOTH are of the same superior design and sturdy rugged construction that have won the enviable reputation enjoyed by F-M motors in all industrial fields. Fairbanks-morse *40° and overload* rating gives liberal power to get through the limbering-up period of new installations. They are both mechanically interchangeable with most other makes, fitting standard brackets on old or new looms. They give sustained, uniform speed essential to maintenance of a uniform quality product.

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Spartan Mills, Spartanburg, S. C., Overseers' Houses

foundation cost to an extent to make it necessary to build two-story houses to keep down the cost per room. The average cost for four to six rooms for the modern type bungalow now being built in the southern textile village communities ranges from $400 to $600 per room. These houses are usually rented to operatives, with light and water supplied and coal at cost, from 25c to 35c per room per week. Considering the value of the land and street improvements, as well as the cost of the house, this means a return of only 2% to 3% on the investment. There is a difference of opinion as to the soundness of this. Of course, the mill owners have to charge the balance of what should be the return against operating expense. This is one of the several reasons why textile operatives in the Southeast can receive a lower money wage than those of the North, yet live under better standards.

Twenty to 30 years ago practically all the lots in southern textile villages were 100 x 200 ft., because the Southeast was essentially a farming country and no one was accustomed to living on a small lot. In those days, without improvements, the cost of giving a family a large lot as against a small lot meant only a difference of a few dollars—or the value of the land. At the present time, with typical village street improvements, there is a very different cost factor involved other than land cost. Some years ago we had occasion to work out for a client a tabulation showing what the undeveloped land within the village was actually worth on the basis of complete improvements. We were able to show pretty conclusively that it would pay to grade house sites, even at considerable expense, in blocks where the street improvements were completed, as against extending the village with the necessity for providing further improvements. I note the tabulation of these figures, in which the various expenses have been capitalized:

Value of 75-foot Frontage Lots in Developed Mill Village

1. 4′ concrete sidewalk 75′ x 4′=300 sq. ft.=33⅓ sq. yds. @ $1.50	$50 00
2. 24′ roadway (½ width) 75′ x 12′=900 sq. ft.= 100 sq. yds. @ $1.00	100 00
3. Curb and gutter (1 side) 75′ @ $1.00	75 00
4. Proportionate share of drainage system	50 00
5. Proportionate share of sewer and water system and wiring	200 00
6. Land value lot 75′ x 140′ = 10,500 sq. ft.=0.24 acre @ $416.67 per acre (average land value)	100 00
7. Grading lot, planting street trees, sodding, etc	100 00
Value of investment	$675 00
Capitalizing these costs at 6 per cent (per lot unit) per year:	
Capital expense $675.00—interest @ 6 per cent	$40 50
Maintenance of mill village streets, yards, and utilities	20 00
Depreciation per year on capital expense—$675.00 @ 5%	33 75
Total	$94 25

An annual expense of $94.25 is 6 per cent interest on $1,571.15. Each 75-ft. lot in a developed village is therefore worth in dollars and cents about $1,500.00, varying according to different conditions.

At the present time the typical lot size is much smaller than it was years ago, yet it is not as small as typical lot units in northern cities, for a number of reasons. First, the factory insurance associations raise the premiums where houses are built closer than 30 ft.; thus with a 35-ft. frontage bungalow, this means a 65-ft. lot. Second, the operatives themselves are not used to living close together and want a certain amount of yard space. The average bungalow lots in southern textile villages are from 65- to 75-ft. frontage and 125 to 175 ft. deep—150 ft. being the average depth, although under city conditions the tendency is towards the minimum and even smaller sizes.

Where the mill is located in open country, however, the desire for open space still exists, and the mills are inclined to make the lots as large as consistent with a reasonable cost for maintenance of street improvements. The majority of the operatives—possibly 80% in country mill communities, and not over 50% in communities located on the outskirts of a city—usually use the rear yard space for home gardens. Where land is available the mills assign additional space for garden purposes for the operatives desiring them, in which corn and larger vegetables are grown.

The lot sizes determine the block and street arrangement, so that unless

Typical Southern Mountain Cabin

the site itself has unusually abrupt topographical features, these being usually reserved for park areas (if properly located), the lot and block units are theoretically superimposed on the land and adjusted to meet the topographical difficulties.

Features of Village Life

Features of village life is a broad heading, as it includes the schools, stores, churches, boarding house, etc. What I have in mind particularly is the relation which such features of every-day life bear to the town plan.

Very few villages allow cows and pigs to be kept, except on the outskirts of the village, and this has led to the necessity for locating, in accessible and yet unobjectionable areas, community cow-stalls, and when not entirely proscribed, as is the case in many instances, the pig-pens. The average mill village family has a fondness for its cow only exceeded by its fondness for its cottage organ—the latter, by the way, being quite an interesting feature of textile community life, which is brought to the villages from the mountain home. Each cow is kept in a separate stall and is milked by the owner. Some of the new villages, where sanitation is made a big issue, have installed herds and dairies and sell milk to the operatives below cost, in order to eliminate the nuisance of scattered stock.

Then provision for automobiles has become quite a problem in mill villages. A recent survey of an average South Carolina mill showed 46 cars for 74 houses. Figuring the average mill family as five people—two adults and three children—this means one car to eight people. The problem has been met in the majority of new villages and in some old villages by building group garages conveniently located either in the middle of blocks, where lot depth is sufficient or the block size is irregular, or in areas not suited for house building. This has proved the most practical working out of the problem, and eliminates the unsightly sheds which the operatives would build in their yards to shelter their cars.

With the elimination of stock running wild in the villages, it has been possible to do away with unsightly fences and to enclose the yards with hedges, or leave the front yard open and enclose the rear yard. Eliminating the outhouses has made it possible to do away in most instances with alleys, and the provision most desirable for access to service is a joint driveway for every two houses,

Erlanger Mills, Lexington, N. C., Shingle Bungalow

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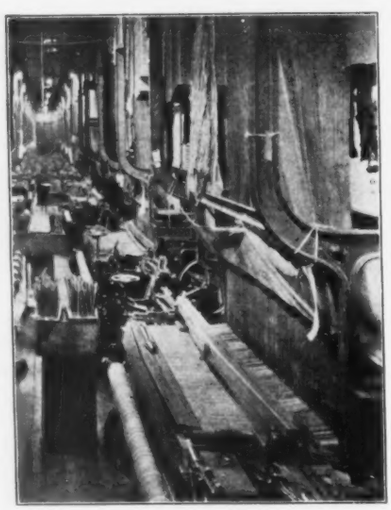
Cooper Hewitt illumination provides more seeing power in the harness than any other light!

No matter what kind of illumination you are using, only one twentieth of the light on the loom surface penetrates deep into the harness. And that is just the place you need light the most—to find broken ends—to rethread the heddle—with minimum delay.

Cooper Hewitt Work-Light is a different kind of light. It affords more seeing power when the light is relatively dim than any other light, including daylight.



The photograph above tells a clean cut story of fine lighting in the harness. Remember it is from a general overhead illumination that carries deep into the machine. The smaller picture shows general view of looms. Note absence of glare and deep shadows. Both were taken in the Lund Textile Co. plant, Farnumsville, Mass.

It gets down into the guts of the machine so that the eye can see and the hand can work.

Because of this unique quality and its even diffusion from the long luminous tube, the Mercury Vapor lamp, invented by Peter Cooper Hewitt, has revolutionized lighting in the cotton industry.

A trial installation will be made in your plant without obligation.

Cooper Hewitt Electric Co., 849 Adams St., Hoboken, N. J.

COOPER HEWITT

A General Electric Organization

breaking into the curb at the street. Where possible, we reverse the floor plan of two adjacent houses so that the kitchen and service side of both houses are adjacent to the driveway—that is, unless other conditions such as relation of prevailing winds to the bed-rooms and porches are more important. Inasmuch as it is easy to wire the houses from the rear, the custom of locating pole lines along rear lot lines in the interior of blocks is being generally followed. This gives the trees in the planting strip a much better chance for growth.

These and many other minor problems, yet intimately connected with the life of the village people, must be considered in each layout. The character of goods manufactured oftentimes has an effect; for instance, in the bleacheries it is most important that the walkway approaches, on account of keeping the workers' shoes clean, be paved or hard surfaced, thus making the problem of pathway circulation and pavement more important in a bleachery or a white goods mill village than otherwise.

I mentioned the fact above that the negro does not make a machine worker. At the same time there are a number of negroes employed in every southern mill, usually for warehouse duty, in connection with the handling of supplies of cotton and finished goods, as janitors, etc. This necessitates houses for negroes which must be located in a group and, if possible, as a unit by themselves, usually on the outskirts of the village.

Some Examples

Necessarily in a discussion of southern conditions, textile mill requirements, and details of landscape planning, the *theoretical* planning of a mill village is considered. The *practical* solution of every problem is different. Some of the plans and pictures illustrated herewith bring out most interesting points in connection with the plans of new textile villages and replanning of existing communities.†

The general plan for the industrial town of Chicopee, Ga., represents a solution of a problem which comes as near being ideal in the relation of the street circulation to the mill and town center, satisfactory adjustment of the block and lot plan to the topography, and the provision for open areas, as I have even seen worked out. The improvements to be carried out from this plan, when completed, will make it one of the best examples of the well built, completely developed textile community in the South. In the newly completed mill village bungalows, a departure has been made from the usual wood type of construction by building all the houses of brick veneer, varying the design with stucco gables and different roof types, providing asbestos shingle roofs, copper gutters and down-spouts connected to storm drainage system, and a type of inside finish which is better than is usually used. The village itself will be made complete in every detail, even all wires being placed underground both for street lights and house service.

The redeveloping of the village of the Laurens Cotton Mills is a most interesting example, not only of replanning of an old village, but of the change in living conditions, arbitrarily brought about by the mill owners. The old village of Laurens Cotton Mills represented about the worst type of textile village: shacks without conveniences of any kind, built on a street system which had no relation to topography or circulation requirements. When called in to advise on this problem, my recommendation that the existing houses of little value be razed and that new houses be built on a better plan, so that the improvements which were contemplated would not be based on obsolete conditions, was favorably received. As a result, there now exists at Laurens a new village of several hundred houses—stucco bungalows—with street improvements carried out, and a street plan which not only conforms to the topography, but gives proper circulation to and from the mill, to the great satisfaction of the mill owners and the employes.

The survey of Chadwick-Hoskins Pineville plant showed that the existing houses and streets, being of a good type of construction, had to be considered as the basis for the plan. It also showed that by moving one employe's house and the boarding house, which were on the direct line of approach to the mill from the neighboring town, a direct connection with a community house and park treatment on the axis could be developed—the community house location serving as a terminus to the main approach, but also being conveniently located with respect to the mill and the old and new villages. This is typical of village expansion problems, and shows that very rarely are there existing obstacles which make it impossible to secure a satisfactory solution of the many problems involved.

The notations with respect to the various pictures of village conditions are explanatory of the different views. Of course, it has been impossible to illustrate many villages. There are other mill communities in the South that are quite up to the standards established in the textile communities which are illustrated herewith and which deserve mention as being attractively developed textile villages. The West Point Manufacturing Company (one of their Lanett Mill parks is here shown) has a record of improvement work in its six large textile villages in the Chattahoochee Valley of Alabama, that has meant living conditions of the most satisfactory type for its employes; in particular the provision for schools, auditorium, and playgrounds, which in the six mills exceeds a half million dollars in cost, has had much to do with developing the mill people. The American Textile Company at Atco, Ga., also has one of the neatest and best maintained villages in the South.

Although many others might be mentioned, it is sufficient to say that the outstanding success which this village improvement work has meant for mills undertaking it during the past ten years, in improvement of both living and working conditions, and in reduction of labor turnover, has stimulated many other textile mills to undertake the same type of improvements. Indeed the initiative displayed by some of the leading textile mills of the South has meant much in providing good examples of industrial village life for the balance of the industry.

* * *

(This article originally appeared in *Landscape Architecture*, and is reprinted through the courtesy of that publication. We are also indebted to them for the original plates which they have supplied for the illustrations.—*Editor*).

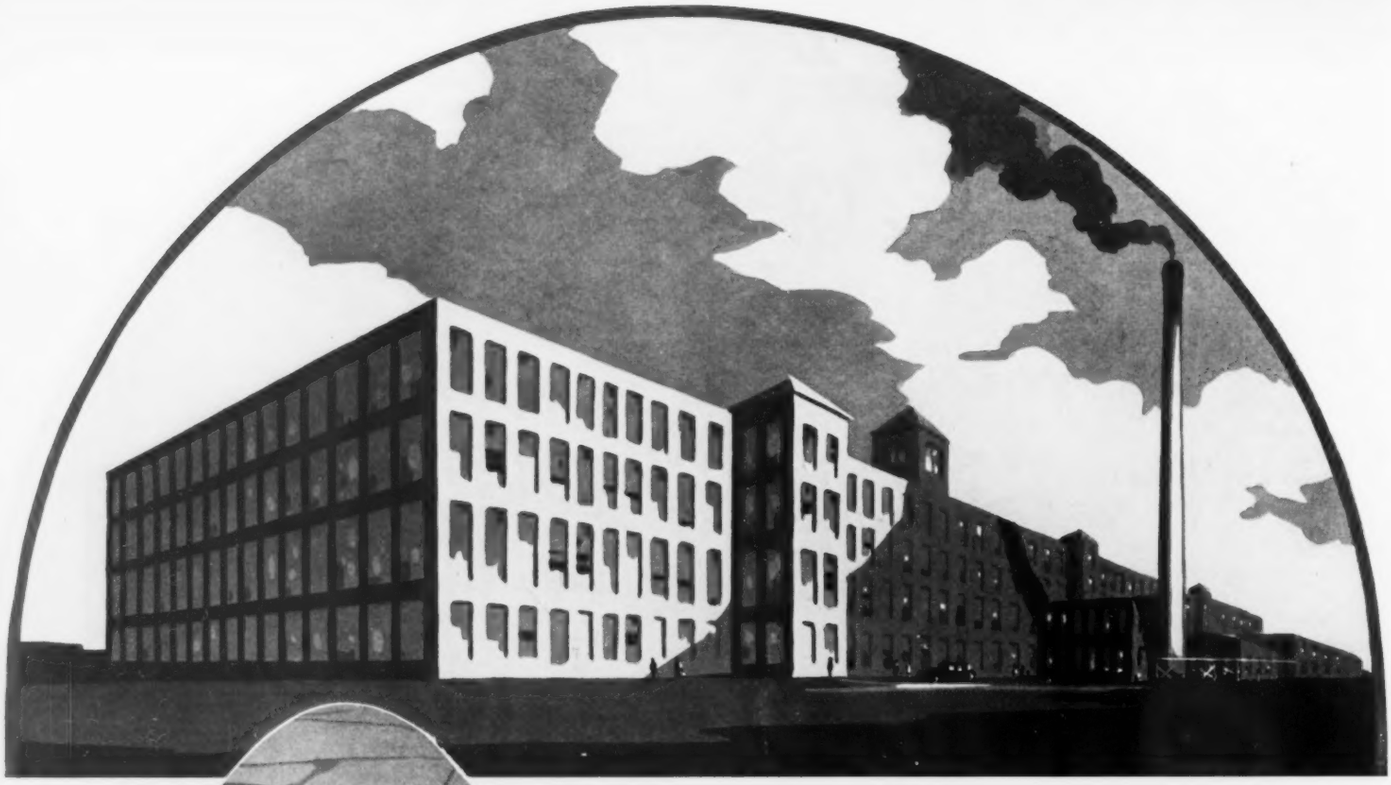
VIEWS IN VILLAGE OF SAYLES-BILTMORE BLEACHERIES, BILTMORE, N. C.

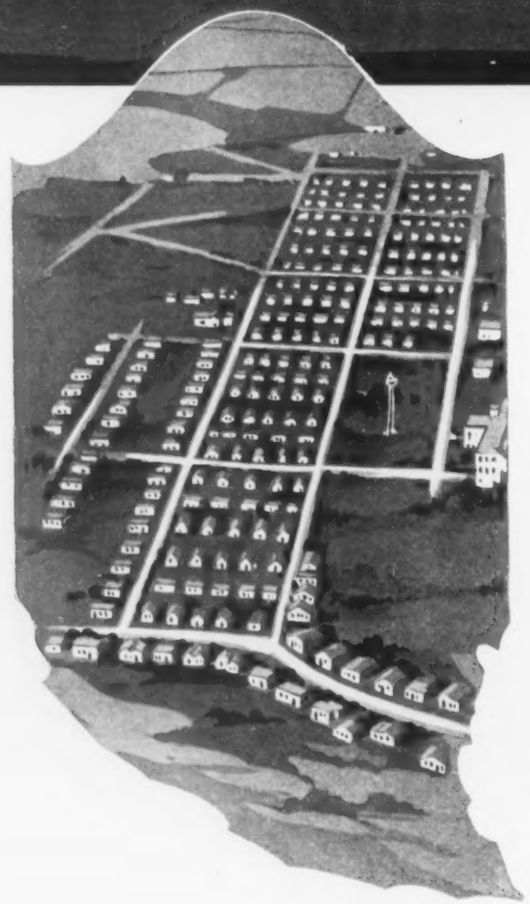
Mountain Conditions, Requiring Terraced Sites and Steep Gradients

Another View, Also with Concrete Streets and Whiteway Lighting

Street with Executives' Houses

† In the examples, architectural and engineering design of mills and mill houses on Sayles-Biltmore, Chicopee, and Pacolet Mills by J. E. Sirrine & Co., Greenville, S. C. All village design and landscape work by E. S. Draper.





The new addition of the American Textile Company of Atco, Georgia, increases their equipment for the production of drills, sheetings and osnaburgs from 35,000 ring spindles to 50,000 ring spindles and 1,200 looms.

It is interesting to know that this company was one of the very first to better their employee living conditions by constructing for them a comfortable, healthful mill village in which each house could rent at a minimum.

The growth of the American Textile Company since 1910 is a reflection of their progressive, efficient management. We are proud to number them among our textile clients, for both the mill and the mill village are the combined work of our Architectural and Engineering departments.

Whether it is a question of changing location or increasing present capacity, we will be glad to furnish you, without obligation, with exact data on each phase of your problem.

See also CONSOLIDATED TEXTILE CATALOG

ROBERT AND COMPANY

ATLANTA INCORPORATED GEORGIA

Architects and Engineers

REPORT OF MILL CONSTRUCTION FOR 1927

Analysis and Details of New Mills, Enlargements And Improvements

Fewer New Projects, but Much Revamping, Modernizing and Enlarging of Plants

THE condition of overproduction which was much discussed in the textile industry during 1927, was one of the important elements in holding new mill construction in that year to a minimum. Although there was a fair quota of new enterprises entering the field, they were largely of a specialized nature, aimed to supply needs which current trend showed are on the upswing. Enlargements and improvements through 1927 were directed for the most part toward rendering manufacturing more efficient either by moving machinery to new locations, consolidating scattered plants, or revamping plants on existing locations with more modern machinery or for a change of product.

The removal from active use of much machinery during the year surely balanced or perhaps overbalanced the additions made, with the result that the industry is maintained without evidence of further machinery expansion to act as a burden, and with probability that if market conditions continue to improve, a fair amount of construction will be necessary in coming years to keep abreast of modern requirements.

Numerically TEXTILE WORLD'S record of new mill construction for 1927 is almost on a par with 1926. In fact, however, it marks a continuance of the low point set in that latter year, and is the lowest point noted since 1897. New enterprises in cotton and silk were distinctly fewer in number than in 1926, while in the knitting and miscellaneous fields there were more new concerns reported in 1927 than in the previous year.

COMPARISON OF NEW MILL CONSTRUCTION OF LAST 12 YEARS

	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916
Cotton	23	34	40	39	74	57	46	89	74	29	52	51
Wool	10	9	17	15	38	34	36	30	54	24	24	23
Knitting ...	70	52	84	57	73	94	103	59	84	120	97	113
Silk	19	37	38	22	26	24	31	71	61	49	86	60
Rayon	5	8	11	..	..	..	..	..	..	..	..	..
Miscellaneous	46	38	49	53	21	29	26	15	16	27	38	33
Total ..	173	178	239	186	232	238	242	264	289	254	297	280

The two States which divide the honors in grand total of mill construction activity are North Carolina and Pennsylvania, largely in cotton and knitting mills. New England, while showing a minimum of constructional activity in most branches of the industry, does however reflect the efforts of the progressive mills in the wool field to keep abreast of the times.

As indicated above much of the improvement made in plants during the year has been either in labor saving machinery with higher operating efficiency than the older types, or in the expansion of certain classes of machinery whose product is particularly in demand. Of the former the cotton industry is the outstanding example, with every effort being made for short cuts in manufacturing, while of the latter the widespread installation of full fashioned hosiery machinery in knitting mills to meet expansion in full fashioned demand is typical together with growth in plants on plushes, woven labels and braids.

New Cotton Mills

The South accounts for 13 out of the 23 new cotton mills shown on our records. Five of these are in North Carolina, three in South Carolina, two in Georgia and Arkansas and one in Texas. In 1926 the South held 21 out of the 34 reported new mills. Pennsylvania also appears prominently in the cotton industry in 1927 with a credit of five new mills during the year. North and South Carolina are the leaders in the record of enlargements and improvements with 34 each out of a total of 142. Next in line are Georgia and Pennsylvania with 15 each. Then follows Alabama with 12, while no other State exceeds five.

Of particular interest among construction items in the cotton industry during the year are noted the following: Russell Mfg. Co., Alexander City, Ala., new weave shed to contain 1,000 looms; West Boylston Mfg. Co., Chisholm, Ala., mill to house 30,000 spindles transferred from Easthampton, Mass., and mill village; Lincoln Mills of Ala., Huntsville, Ala., extension to house 10,000 spindles; West Point Mfg. Co., Riverview, Ala., extensions to Riverdale and Fairfax Mills; Morrillton (Ark.) Cotton Mills, mill to house machinery transferred from Groveville, N. J.; Chicopee Mfg. Corp of Ga., Gainesville, Ga., new plant to house 50,000 spindles and 1,200 looms; Patterson Mfg. Co., China Grove, N. C., several large extensions; Cannon Mfg. Co., Kannapolis, N. C., complete 50,000 spindle addition and erect bleachery building; Arista Mills Co., Winston-Salem, N. C., additions to South-

(Continued on page 417)

Air Service of New England

Airplane View of The Esmond Mills, Esmond, R. I., Manufacturers of Cotton and Wool Blankets. Large Building at Right Center Built During 1927, to Increase Finishing Capacity

INDUSTRIAL ENGINEERING AND ARCHITECTURE

STRUCTURAL and ARCHITECTURAL DESIGN — The design and inspection of construction of textile mills, industrial plant buildings, and special structures, including all structural and architectural features. Mill Office Buildings and Housing.

MECHANICAL — The organization or reorganization of machinery layouts and power for textile and other industries.

POWER–Water, Electrical, Steam — Power developments for private enterprises or Public Service. Examinations and Reports.

VALUATIONS or APPRAISALS — For purposes of taxation, insurance, purchase and sale, reorganization or development.

GENERAL ENGINEERING — Examination of locations and sites for Industries and reports as to their relative value and special conditions.

We will discuss any of these subjects by correspondence or in an interview without obligation.

See also CONSOLIDATED TEXTILE CATALOG

CHAS. T. MAIN, INC.

ENGINEERS

201 DEVONSHIRE STREET BOSTON, MASS.

Montgomery Plant of West Boylston Mfg. Co. Begins Manufacture of Cord Fabric

Thirty-two Thousand Spindle Mill And Village Built in Six Months

By C. L. Emerson *

WHEN a ship is launched the spectators observe it as an object, a unit, just a new ship; but the men in the shipyard, from president to riveter, know that it is a complex coordination of steel, machinery, piping, electric wiring and a thousand other details all combined into the apparently simple object which they have built. Nor is it long before the ship has its personality and "she" is a source of pride to captain and crew as she takes the ocean for her voyage to distant lands.

The launching of a new industrial plant bears some of the same earmarks and it is with considerable pleasure that we describe below certain of the integral parts entering into the make up of the new Montgomery plant of the West Boylston Manufacturing Company of Alabama, which on January 1, 1928, made its bow to the industrial world and began to demonstate its manufacturing personality.

The parent company, the West Boylston Manufacturing Company, is located at Easthampton, Mass. It is one of the oldest textile manufacturing corporations in the United States, having been in continuous operation since 1814. Its plant was first located at West Boylston, Mass., but in 1900 a new factory was built at Easthampton, and later the entire business was removed to this more suitable location. The company has a history of 113 years of successful operation. The present officers are F. Coit Johnson, president; Acosta Nichols, vice president; and G. Arthur Cook, treasurer. The product of the mill for about sixty-five years has been sold by J. H. Lane & Company, of New York City, of which F. Coit Johnson is also president.

This gives a fine lineage to the new company, and the highest type of management has been assured by the election of F. Coit Johnson as chairman of the board; Stuart H. Johnson, his son, as president, and G. Arthur Cook as treasurer. The product of the Alabama plant is cord fabric for automobile tires in which line the parent company was a pioneer. Equipment consisting of 32,256 spindles out of the total of 137500 spindles have been removed from the Easthampton plant and set up in the new mill. These will produce annually some 6,000,000 pounds of fabric when operated on a day and night schedule.

Background of New Plant

The background of this removal south is of considerable interest. J. H. Lane & Company has for many years been interested in several mills located in the South, and for a long time had been considering the very low manufacturing costs of these mills compared with costs obtained in New England. G. Arthur Cook was delegated to make a close study of the causes underlying these low costs and he acquainted himself fully with all the comparative advantages and disadvantages of the southeast as a location for cotton mills. Mr. Cook's investigations were so thorough and his conclusions so sound that he has been widely quoted on his findings in regard to this matter.

As a result of his data, the West Boylston Mfg. Company decided to combine with the existing Crown Mills at Dalton and build a medium size plant on tire fabric at that point. This plant was completed in 1924, and since that time has been operating about 14,000 spindles day and night. The results obtained here were watched with meticulous care and fully confirmed Mr. Cook's predictions.

Having amply demonstrated the great savings in manufacturing cost to be obtained in the South, the next step was to put on foot a plan to take the utmost advantage of it. Again Mr. Cook, with Stuart H. Johnson, made a complete tour and review of the South, this time to select the most favorable location in a territory of whose general excellence they had previously convinced themselves. Their travels led them from Arkansas to North Carolina, and after analyzing all phases of the situation the selection of the general vicinity of Montgomery was made in April, 1927. The Alabama Power Company was most helpful through their representatives, Col. R. A. Mitchell and Tom. D. Johnson, in furnishing information regarding cities in their territory.

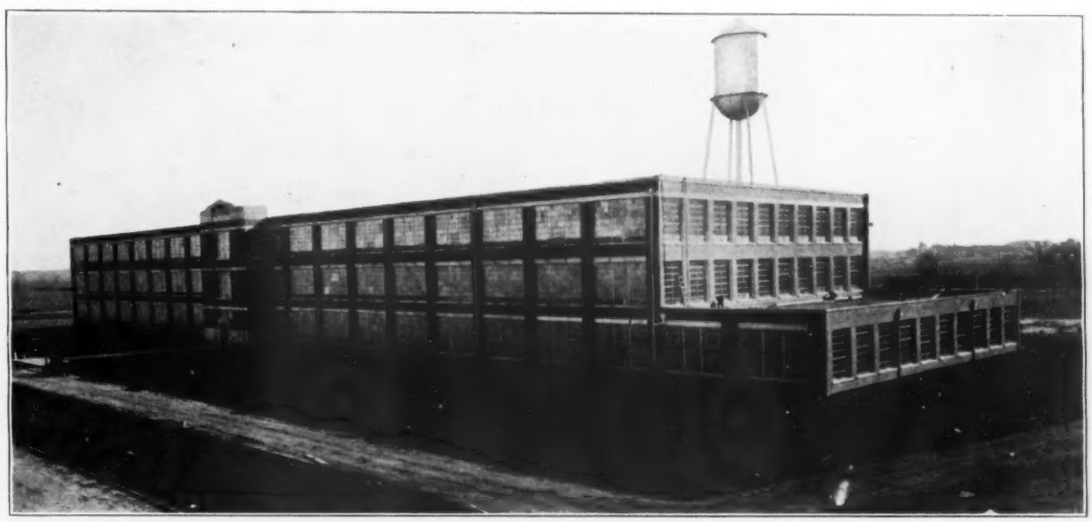
We believe that this general procedure represents the maximum studied conservation coupled with energetic action demonstrated by any eastern textile enterprise in investigating and taking advantage of conditions as to geographical location which have arisen in the cotton mill industry.

Two Million Dollar Investment

In one short step at a time this program has developed from mere interest to a great construction program. The time required was considerable, as no step was actually taken until the success of the previous one was assured. The management was eager to hear new things but no investment was made until every claim was verified in detail; then they were freely made on an ever-increasing scale. The step here described, involving as it does some two million dollars, is no insignificant one.

The new corporation, the stock of which is owned entirely by West Boylston Manufacturing Company of Massachusetts, was founded in May, 1927. The financial structure of the new company had been carefully planned. It was decided to authorize a very conservative issue of first mortgage bonds. These were marketed in two hours after issue by Ward Sterne & Company of Birmingham, Alabama, in the amount of $500,000. An issue of second mortgage bonds amounting to $300,000 was largely taken by citizens of Montgomery and J. H. Lane & Co. The physical value of the plant has been appraised by engineers as $1,565,700, for land, buildings and machinery. In addition, ample working capital has been provided.

Previous to the final choice of a location the West Boylston Manufacturing Company called in consulting engineers thoroughly conversant with the South, and with all details of cotton mill construction. In conjunction with these engineers, Mr. Cook worked out plans for an ideal manufacturing plant which was built with the utmost speed, at a very moderate cost and which is shown in some detail by the accompanying illustrations. The plant went into full day operation on December 24, 1927, and the quality of cord fabric produced is considered by Mr. Burns, the superintendent of the eastern plant, to be fully equal to his best.



Main Building, Montgomery Plant of West Boylston Manufacturing Co.

Site at Camp Sheridan

The engineers selected, as the particular site for the plant, a fine tract of 132.6 acres, formerly a part of Camp Sheridan, located near Chisholm, a suburb about 3½ miles northeast of the center of Montgomery. During the existence of the camp, hard surface roads and a sanitary sewer system had been constructed which were useful in the new development, and which governed to some extent the location of buildings.

This tract is served by the Western Railway of Alabama which, with its associate, the Atlanta and West Point Railroad, is a part of the main line

* Vice President, Robert & Co., Architects and Engineers, Atlanta, Ga.

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route from New York to New Orleans. The land is practically level except at the north and east boundaries, where it falls away rapidly, insuring excellent drainage. Very little money had to be spent for grading.

The soil is a uniform gravel clay of fine bearing power which has permitted foundation costs to be reduced to a minimum. The site proved excellent and economical from all angles. It is connected to Montgomery by a street car line, terminating at the edge of the property and by several concrete boulevards. The old Wetumpka highway passes along the eastern border. The W. of A. R. R. has established a station called Bolyston near the terminus of the street car line.

The map of the general layout shows very clearly the arrangement of buildings and the village. The front of the main mill building was pushed some distance north of the railroad in order to coincide with the crest of a low ridge. This position gave good drainage away from the front of the building. A siding was built in from the east end of the property and divided into two spur tracks, one of which was run past the warehouses and out to the shipping platform to handle both cotton in and goods out; the other was run to the trestle in front of the boiler room for handling coal. Only a small coal pocket was constructed as the heating requirements in this climate are ordinarily small. The last two bents of the trestle are for unloading lump coal to be sold to the operatives for home use.

The entire plan was based on a development up to 60,000 spindles, although only 32,000 are at present installed. Every detail has been planned so that the extension can be economically made. The streets shown on the map where no houses are at present located have only been rough graded The other streets have been completed.

The water supply for mill and village is obtained from the city of Montgomery, through large pipe lines to the property and an 8-inch diameter line from thence to the mill. All of this water supply was constructed by the city, except that part lying within the property. The pressure available is 75 lbs. and the supply is pure and ample. Considerable money was saved by this connection, particularly in view of the acceptance of the city pressure by the fire insurance company as one source of supply.

Electricity is furnished by the Alabama Power Company from their main transmission system through a substation stepping down from 66,000 to 440 volts. The transmission line and substation was supplied by the power company at considerable cost to them. It is arranged for extension. Incidentally the rate for electricity will be slightely less than 1c per kilowatt hour, including that for power, mill lighting, and village lighting. This is the lowest textile rate in the country.

All exterior steel work, including the elevated tank and tower, the substation framework and the structural work supporting platforms is painted with aluminum paint, which not only gives long protection from rust but also gives a very pleasing appearance.

All storm and sanitary sewers empty into the system previously mentioned which had already been installed for the camp. This empties some miles away into the Coosa river. The system is adequate for a much larger development than is here planned. The existence of this system effected a further saving in the cost

View in Spinning Department of Montgomery Plant

Arrangement of Processes

Careful study was given to the arrangement of machinery to effect the maximum economy of floor space, and to give a straight forward travel to the goods in process. The building construction was regarded purely as a shell whose function was to protect the machinery. It was decided that a detached picker building gave maximum flexibility and freedom from fire risk to the layout. Accordingly, a three-story building was planned approximately seventy-five feet south of the east corner of the main mill. On the ground floor the opener equipment was located; on the top floor the pickers, and on the intermediate floor the machine shop. There are also two standard warehouse sections, each three stories high, immediately adjoining the picker building and integral with it.

Cotton has a short haul from the warehouse to the opener room from which it is sucked through pipes running through the machine shop to the condensers located in the picker room above. The laps from the finisher pickers are trucked through a covered passageway on a slight incline down to one card room in the main building.

Consideration was given to two, three and four story construction for the main building. It was found that the processes worked out best in a three-story building which was accordingly adopted. The card room is on the second floor, which houses also all the drawing, slubbers and roving frames. From the second floor the roving bobbins go up on the elevator in trucks to the spinning room on the top floor, which contains spoolers and warpers also. The twister beams go down to the first floor which is given over to forming and cabling twisters, re-spoolers and looms.

At the west end of the main mill is a one-story extension about 42 feet long and the same width as the main mill. This gives space for cloth room, inspecting and shipping. Twenty looms with creels take care of all the weaving.

All this machinery is practically the same as new, none of it has been in use for as much as ten years It is the very best of the entire equipment at Easthampton. The company avoided the mistake made by certain others; that is of sending down South their poorer machinery rather than their best. In spite of the fact that this machinery had been well maintained, any part which was slightly worn was replaced during the process of re-erecting at Montgomery. The finished installation is a very efficient unit as evidenced by the quality and quantity of the product being obtained.

Buildings

The main three-story building is 135-feet wide by 410 feet long, with the one story part extending 42-feet beyond, giving the first floor a total length of 452 feet. This building is of very heavy brick and steel construction. There are five 26-ft. spans and the columns are spaced 10′-8″ on centers. The window openings span two bays, giving a center line distance of 21′-4″ between pilasters. This gives a very large glass area and the natural light is all that could be wished. The ceiling height is 17 feet, and a monitor is provided on the top floor for additional light and ventilation.

Particular care was exerciseed in the design to facilitate rapid construction. Standard Bethlehem steel beams replaced the heavy timbers of standard mill construction. These beams came to the work cut to length and completely fabricated together with all connecting angles so they could be quickly bolted in place. Standard steel sash of stock patterns were selected. Cast iron columns with their standard caps and bases were used throughout. The side walls were of brick so the only timber used in quantity was the heavy planking for roof and floors. This entirely obviated the construction delays caused ordinarily by the rejection of timbers. The entire structure is more properly assembled rather than built, and since all details had been carefully worked out in advance, the progress of construction was dependent principally on receipt of materials.

The first floor is of tar concrete built directly on the ground. The proper mixture of materials and care in placing, insure this type of floor being waterproof. All floors have the regulation maple top with a thin intermediate plank betweeen it and the heavy planking. No sagging whatever of floors has been observed.

The roof is flat and has a five-ply tar and gravel covering. The walls are parapetted all around the building and the roof covering flashed with extra care into this parapet. Down spouts are provided at frequent intervals, connecting into cast iron boots and thence to the storm drainage system.

Actinic Glass Used

In view of the large window area actinic glass was used on all sides except the north to minimize glare and cut down the heat. It has proved very satisfactory. Stairways are of concrete housed in brick towers. Window sills and lintels are of concrete poured in place. This concrete work,together with a judicious use of band courses gives an appearance which is architecturally satisfactory, though there are no special features whatever except the front stair tower.

The tower at the front of the mill houses the stairways and a similar tower at the rear takes care of the humidifier pump and filter room on the first floor. The power switchboard for electricity is on the second floor and the lighting switchboard and village transformers and regulators on the third floor. This arrangement is very compact. The rear tower also contains the toilets, one for men and one for women, on each floor, with two for negroes at the ground level opening into the yard instead of the mill. These toilets all have large outside windows, tile floors, cement walls, and brick partitions between fixtures which are of enameled steel. The whole toilet is arranged so it can be flushed down with a hose.

In each department there is a small glass enclosed office suspended from the ceiling and reached by stairs. Here the overseer has his records, telephone, etc. From it he has a clear, unobstructed view of the entire room and every operator. The building is served by two Otis ele-

Thomas E. Murray, Inc., Engrs. Brown-Harry Co., Contrs.

Mill No. 7 of Cannon Manufacturing Co., Kannapolis, N. C.

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Mill No. 7; steam turbine power plant; packing and shipping plant; Y. M. C. A. building; Kannapolis High School; and three sewage disposal plants.

***Thies Dyeing & Processing Co.*, Belmont, N. C.**
Plant, transformer station, and boiler house.

***Johnston Mills*, Charlotte, N. C.**
For Park Yarn Mills Co., plant addition; for Brown Mfg. Co., plant addition; and for Norcott Mills Co., plant addition.

***Groves Mills*, Gastonia, N. C.**
Mill No. 2, boiler plant, warehouse and village.

***Magnet Knitting Mills*, Clinton, Tenn.**
Plant No. 2 for full fashioned hosiery.

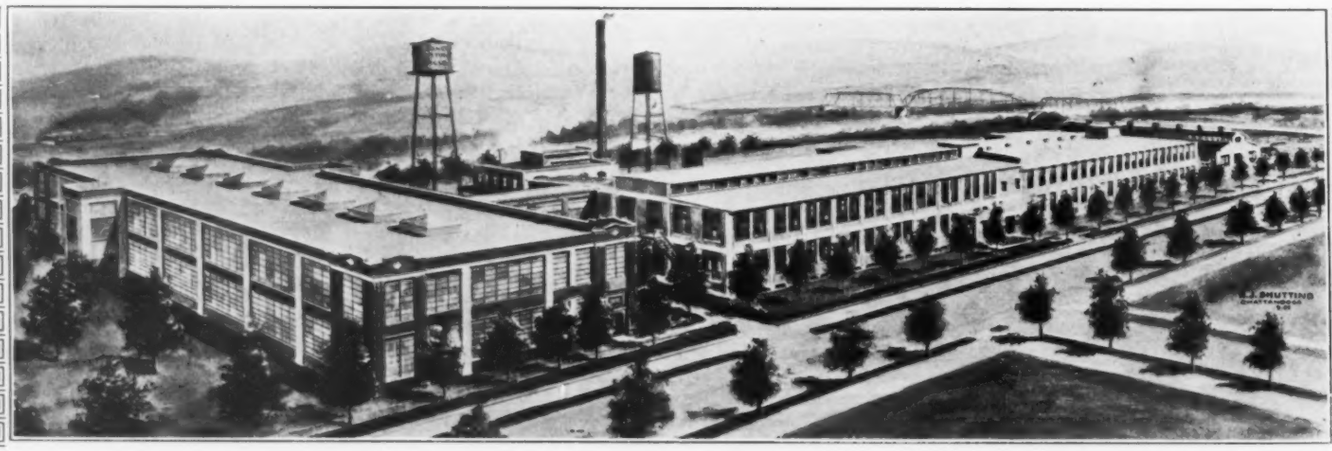
***Halifax Cotton Mills*, South Boston, Va.**
Dyeing and finishing plant, office building, and packing and shipping plant.

***National Weaving Mills*, Lowell, N. C.**
Plant, boiler house and reservoir.

***Kerr Bleaching & Finishing Works*, Concord, N. C.**
Plant addition to bleaching department.

***Cannon Mfg. Co.*, York, S. C.**
Two additions to plants, boiler house, and warehouse.

***Gibson Mfg. Co.*, Concord, N. C.**
Plant addition and warehouse.



J. E. Sirrine & Co., Engrs. Brown-Harry Co., Contrs.

Full-fashioned Hosiery Mill Addition (left foreground) of Magnet Knitting Mills, Clinton, Tenn.

vators of the direct traction type with machines located in pent houses above the roof.

The general design used reduces building maintenance to a minimum as there will be no deterioration of concrete, steel, cast iron or brick work with cement mortar. The only replacement which should occur within many years will be the maple top on the floor.

The general location of the picker building and the warehouse group has been described. The width of the group is 100 feet and the length is 170 feet. The construction is similar to that of the main building, except that the window area in the warehouses is materially less and the ceiling height reduced to 11 feet. A concrete platform is provided all along the back side of the warehouses. This platform is at car-door height. An elevator opens on the platform for handling cotton to the upper floors which also are provided with platforms. As previously noted, the opener room is on the ground floor. This group is laid out so that the handling of cotton is made as easy as possible.

The boiler room is also detached and located some fifty feet south of the picker building. It is out of the way of the future enlargement of the picker building, and is so designed that it may itself be easily doubled.

The entire construction of these mill buildings and also the cottages was carried out by the Batson-Cook Company, of West Point, Georgia, under the personal direction of Edmund Cook and Murphey Pound. This company earned a very nice bonus for completion some sixteen days earlier than the stipulated date in the contract. The relations between the builders, engineers and owners were most harmonious throughout.

Electrical Installation

The driving equipment for all machinery is most modern. The pickers have individual motors mounted on "A" frames. The cards are driven in small groups. The drawing, slubbers, and roving frames are equipped with four-frame drive motors. From this point on all machinery is driven by individual motors, including spinning frames, twisters and looms. Morse silent chains are used to connect the motors to spinning frame and twister cylinders. All motors were supplied by the General Electric Company. There are 317 motors, totalling 2945 H.P. nameplate rating. The average size of motors, therefore is slightly over 9 H.P.

The power supply to these motors is carried back in galvanized conduit to a switchboard room on the second floor of a tower at the rear of the mill. It is controlled by a nine-panel switchboard with a full complement of instruments. The building was planned with the electrical layout in mind so the substation of the power company was placed as close as possible to the switchboard tower. The lead covered cables connecting them are in fibre duct imbedded in concrete underground. The run is only fifty feet, which is the minimum permitted by insurance regulations. These large heavy electrical cables are very expensive.

Lighting Equipment

Since the mill is to operate at night the artificial illumination was made quite ample. There are a total of 773 200-watt lamps and in addition 119 100-watt lamps for watchman lights and for other spaces not used for manufacturing purposes. The lighting intensity varies from 6-foot candles in the weaving to four over the cards.

There are no particular features of the lighting except that all wiring is in conduit, the control switches are so placed that each department is independent, and in addition the center span of the mill in each department is independently controlled so that on dark days this portion only can be illuminated.

Standard R.L.M. steel reflectors are provided for all lamps. These are hung on two conductor cords without braid, but with a slick rubber finish to prevent lint accumulation. The lamps are so placed that a very even distribution of illumination without shadows has been obtained.

Placing all wiring in conduit with metal boxes at junction points has reduced the danger of fire or injury of employes to a minimum. All the work of electrical installation was done by the J. M. Clayton Company of Atlanta.

Small Services

A separate circuit is run through the mill with convenient outlets located on certain columns. These permit the operation of motor-driven tools, scrubbing machines, etc.

An electric clock system is installed with a double-faced secondary clock in each department and a master clock in the office.

A private branch telephone exchange is installed in the main office with trunk line connections to the Montgomery Bell system and extension telephones in the office of each department.

The village lighting will be described in a later article. The mill yard is illuminated with bracket lights, carried on poles and connected to the village system.

Heating Equipment

The heating is the latest type of overhead pipe coil vacuum system. Low pressure steam is introduced into the coils from the boiler house supply through a reducing valve, and the condensate is trapped out by means of Warren Webster fittings and pulled back by suction to the vacuum pump located in the boiler house. The hot condensate is returned to the feed water heater and pumped with makeup into the boiler. This system is most economical in the use of coal. It has already proved its adequacy. During a cold snap in December the temperature went to ten above, which is about as cold weather as Montgomery has experienced for thirty years. The inside temperature was easily maintained at 70°.

Part of the West Boylston Village

All departments have automatic heat controls as installed by the Johnson Service Company. By means of a thermostat the temperature can be set at any desired point and the system will close the steam supply valve when that temperature is reached. The regulation is within two degrees. There is also a device which shuts off the main steam supply valve at its entrance to the mill as soon as the last thermostat has operated to cut steam off the departments.

This system not only prevents a waste of steam but is much more important as an adjunct to the humidifying system. With a maintenance of even temperature the efficacy of the humidity control is greatly enhanced.

Boiler Plant

In the separate boiler room, two Schofield 100-H.P. fire-tube boilers are installed, together with an open type heater feed pump and the vacuum pump for the heating system. A radial brick chimney, 90 feet high by 4 feet inside diameter at the top, is connected to these boilers by a steel breeching. Space remains in the present boiler house for the installation of another boiler and the entire plant can be doubled if this ever becomes necessary.

The only particular feature of the boiler house is its semi-automatic operation. Copes regulators control Fisher governors on the feed pumps so that the water level in the boilers is automatically maintained. The boilers are equipped with McBurney hand stokers and the proper draft setting is automatically controlled through a Ruggles Klingman damper operator.

Meters are supplied to enable the master mechanic to check every operation of his plant. These include draft gauges, pyrometers, and CO_2 indicators. Other meters are installed by means of which a continuous check of boiler evaporation can be maintained. A turbine meter measures the boiler feed, and by weighing the coal the evaporation is immediately known.

This plant will require a minimum of attention and a minimum amount of fuel. The heating system and boiler plant equipment was installed by the Seeley Company of Atlanta.

Humidifiers

High duty heads as manufactured by the Parks-Cramer Company, of Fitchburg, Mass., are installed throughout. This sytsem is capable of maintaining not less than the following relative humidities under the most adverse conditions: Carding and Roving, 55%; Spinning, 65%; and Weaving and Twisting, 75%. A complete system of automatic control consisting of 19 psychrostats is included. The circulating pump is a centrifugal type. The return water is passed through a concrete filter tank and re-used so the demand for water is a minmum. The temperature of this water is maintained constant in the winter by means of a steam pipe coil in the tank operated by a temperature controlled valve.

All these details, together with the maintenance of an even temperature in the mill, has resulted in a very fine humidity conditions which is particularly necessary under southern climatic conditions.

Fire Protection

A standard sprinkler system was installed by the Crawford & Slaten Company of Atlanta. It fully meets the requirements of the Associated Factory Mutual. A tank of 100,000 gallons capacity on a 100-foot tower was installed immediately behind the mill. This tank has a 36 inch diameter riser pipe, which in this climate eliminated the necessity for a frost proof casing or tank heater.

The secondary source of supply is the connection with the City of Montgomery. The warehouses are heated throughout and therefore the sprinklers are on the wet pipe system, thus saving the cost of a dry pipe valve equipment.

The entire plant is piped with compressed air for cleaning purposes. An Ingersoll-Rand 9"x6" compressor supplies air at 50 lbs., and air hose connections are conveniently located throughout the plant.

For the comfort of the help, drinking fountains are located on all floors. Since summer temperatures are high, this water is artifically cooled by means of a Lippman refrigerating system. Three equipments are installed, each connected to a stack of drinking fountains.

All the mechanical and electrical services, both large and small, have been designed with a sixty-thousand spindle unit in view. It has been predetermined where each pipe or wire connection will be made to supply the addition. In a few instances,

The following mills built by us are mentioned elsewhere in this issue of TEXTILE WORLD

32,000 spindle unit for West Boylston Mfg. Company of Alabama, Montgomery, Alabama.

25,000 spindle unit at Opelika, Alabama, and dye house at Lindale, Georgia, for Pepperell Mfg. Company, of Boston, Mass.

Full Fashioned Hosiery Mill at Albany, Alabama, for Cooper, Wells & Company, of St. Joseph, Michigan.

BATSON-COOK COMPANY

General Contractors

WEST POINT, GEORGIA

HAS speed of construction a money value to the owner? Contract for West Boylston buildings was awarded us June 8, 1927, and spinning operations started November 21, 1927.

12 Years Old and still going strong

A *Thor* Electric Drill that has seen 12 Years of Service

The World War had just about started when this THOR Drill was manufactured and put into service. It has been in constant use during these 12 years, having never been in our service department for repairs until recently. And then the total charge to put this drill into first class condition was only $17.20, or $1.44 per year. HOW'S THAT FOR LOW UPKEEP COST?

"THORS" Are Built To Stand the "Gaff"

Only after twelve years of constant service was it necessary for this firm to send their THOR Electric Drill to our repair department. The motor was in perfect condition and all it needed was a cleaning. A switch handle, grip handle, chuck jaws and chuck scroll were broken and replaced.

The upper armature bearing and brushes were worn and a cable clamp was missing. The entire charge for these parts, including labor, was $17.20 or $1.44 per year. *How's that for low upkeep cost.* The drill is now in first class condition and will give this firm many more years of service.

The same ruggedness and dependability that were features of THOR DRILLS of 10 or 15 years ago are still important characteristics of all THOR Drills today. Experienced craftsmen, plus time-tried, tested methods, are making THORS the best built drills on the market.

Try a THOR for 10 days in your own shop free of charge. Put it to the test. If its performance doesn't satisfy, return it at our expense. No red tape. Make us prove what we say—write today.

TOOLMAKERS SINCE 1893

INDEPENDENT PNEUMATIC TOOL CO.

PNEUMATIC TOOLS — GENERAL OFFICES 600 W. Jackson Blvd. CHICAGO — ELECTRIC TOOLS

FACTORY AURORA, ILL. — BRANCHES THE WORLD OVER

Eastern Office 1463 Broadway, New York. London Office 40 Broadway, Westminster, London

as for return lines, extra cost was involved in the present installation to take care of the future to the best advantage.

Mill Village

The village, lying immediately north of the mills, contains 124 cottages, 50 garages, and a store building. It has wide streets which are either hard-surfaced or graveled. All houses have connections for water, sewer, and electricity. Concrete curb and gutter is provided for practically all streets, and complete systems of street lighting, storm drainage, and fire protection have been installed. A description of the village will be printed in a later issue.

Construction Schedule

This development probably represents the quickest transfer on record of machinery from New England to a southern location. The building contract with Batson-Cook Company was closed on June 8, 1927, and ground was broken at Montgomery on June 13. In seventy-four working days the mill was ready for the reception of some machinery. The shipping program on the textile equipment had been planned out step by step. The actual dismantling at Easthampton was begun on September 7. This dismantling was not done by shop erectors, but by a special crew organized by G. Arthur Cook, with the assistance of the engineers.

The first shipment of machinery was received at Montgomery on October 3. In all it required 140 cars to transport the entire shipment, the last of which was received on November 19. In the meantime an erecting crew had been organized at Montgomery who re-assembled the machinery as fast as it was received, belted or chained it to motors and put it in operation. At the same time, any parts which were noted as worn when dismantled were replaced with new parts as the erecting was carried out. Only a nominal amount of replacement was necessary.

On November 21 cotton was started in the opener room, and on December 13 the first finished product was turned out. As noted above, regular production began December 24, with most satisfactory quality of output.

It required only 84 working days for the Batson-Cook Company to complete every square foot of working floor space ready for operation of machinery. This also meant that the other contractors on heating, lighting, fire protection, humidification, wiring, etc., had to be and were ready with their various services.

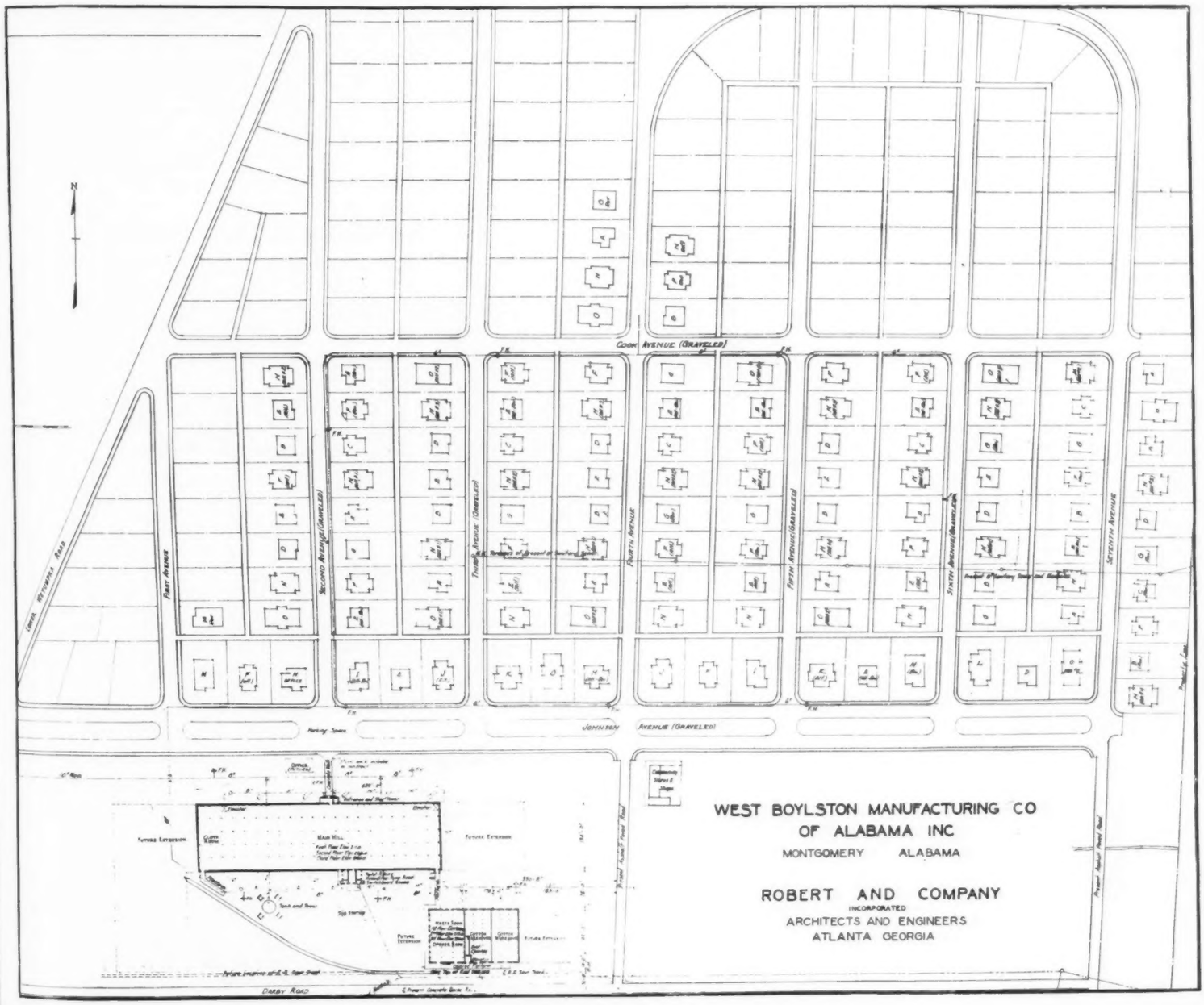
The entire construction, including main mill, warehouses, picker building, and cottages were built, inspected, and accepted within five months and twenty-five days, calendar time. The fact that a program requiring ordinarily ten months or more was completed in less than six, is very gratifying to the management.

Usually exceptional construction speed is accomplished by excessive cost. In this case the reverse is true. The cost of the development will compare favorably with any other of recent years considering the character of the installation. The final cost was approximately ten per cent less than the first preliminary estimate submitted by the engineers in May.

The schedule below gives in some detail the divisions of expense.

Cost Data

Building 226,968 sq. ft. including elevators, sprinkling, heating and lighting; cost per square foot.....	$1.59
Village, 550 rooms, including cottages, garages, lattice enclosures, streets, sewerage, water supply, drainage, fire protection, curbing and electric wiring, and street lights; cost per room	549.00
Power wiring cost per HP installed	9.17
Humidifiers, cost per spindle.	0.91
Dismantling, freight, hand-	



Layout of Mill and Village, West Boylston Mfg. Co. of Alabama

COTTON MILL SURVEYS

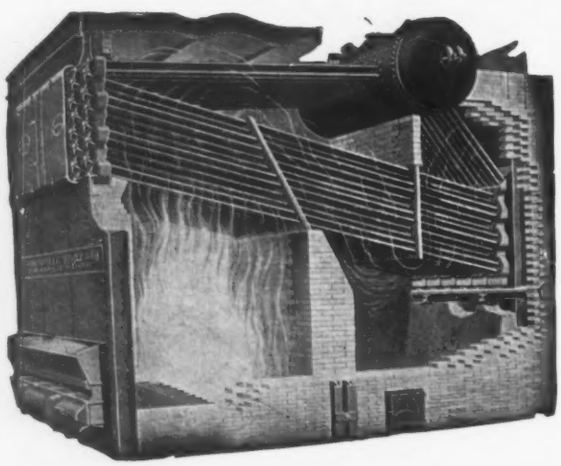
MADE BY an organization of specialists consisting of
PRACTICAL MEN each of whom has had many years of experience
IN his own particular specialty. We study
EACH DEPARTMENT and submit definite recommendations.
LARGE SAVINGS better cloth, and greater output will
RESULT if our recommendations are followed.

THE TEXTILE DEVELOPMENT COMPANY

Sidney S. Paine, President 80 Federal St., Boston, Mass.

SPRINGFIELD SECTIONAL ALL STEEL WATER TUBE BOILERS

ALL SIZES—ALL PRESSURES
EACH handhole covers FOUR tubes—



In the plant of the AMERICAN BEMBERG CORP. (described on another page) these boilers generate all steam used in this modern plant. Initial installation 1200 H.P. Additional installation 1900 H.P.

Repeat Orders constitute the largest part of our business.

SPRINGFIELD BOILER CO.

SPRINGFIELD, ILLINOIS

Offices:

Chicago; New York; Boston; Philadelphia; Pittsburgh; Richmond; Atlanta; Cincinnati; Detroit; Minneapolis; Kansas City; Dallas; San Francisco; Seattle; Los Angeles.

ling assembling, and repairs to textile machinery; cost per spindle.....	2.68
Total cost of development including land, siding, grading, and all other items, except the textile machinery, as it existed at Easthampton, Mass.; cost per spindle	29.70

The management of the mill at Montgomery has been entrusted to Carl M. Moore as agent and R. B. Horsley, as superintendent, under the general direction of G. Arthur Cook at Easthampton. Mr. Moore was for twelve years assistant to the agent of the West Point Manufacturing Company at West Point, Georgia, and Mr. Horsley was formerly superintendent at the Opelika Manufacturing Company. These men are now in active charge of the plant and the engineering forces are being withdrawn.

Robert & Company, Inc., of Atlanta were selected by West Boylston to do the engineering on this development, at its inception, and have followed it through to completion. L. W. Robert, Jr., President, was in general charge of the entire construction. H. W. Howarth was the resident engineer.

F. Coit Johnson has expressed himself as being entirely satisfied with the quality and quantity of the output of the plant and as being pleased with the rapidity of execution and the exceptionally low cost. The citizens of Montgomery state that this development is the most important happening in the commercial life of their city.

Important Enlargements and Improvements Made by New England Woolen Mills

Old Cordis Mills Taken Over by New Owners And Equipped for Manufacture of Woolens

DURING the last year many New England woolen mills made important enlargements and improvements, and in one case an answer was given to the question of what is to be done with mill properties of cotton mill companies that have discontinued operations. Reference is made to the old Cordis Mills at Millbury, Mass., which are being re-equipped to manufacture woolen goods under the name of the Millbury Woolen Co. This work, and the expansions at the Taft Woolen Co., Caryville, Mass., Schuster Woolen Co., East Douglas, Mass., and Hartford Woolen Co., Hartford, Vt., were carried out under the supervision of Chas. T. Main, Inc., engineers, Boston.

Millbury Woolen Co.

The operation of changing the old Cordis Mills' plant into a carded woolen mill is being watched with a great deal of interest by the textile industry, because it is one of the best examples of the reclamation of our discontinued cotton mills and utilizing them for other purposes. No reasonable expense is being spared to equip the plant properly, and with the expert management that is behind it, its success is well assured. This property is owned and will be operated by the same interests as now operate the Hayward Woolen Co. and the Schuster Woolen Co., of East Douglas, Mass.

The work at this plant was very naturally out of the ordinary in that the buildings were originally used by a cotton mill and were operated as such for a good many years. The cotton mill was liquidated last summer and the buildings purchased by the present owners. The main mill is 288 ft. long by 84 ft. wide, three stories high, and was built in 1914. It is of modern construction with good story heights and steel floor beams. The column spacing and the width of the mill are such that they are almost perfect for the installation of woolen machinery.

There is also a building 41 ft. by 50 ft., two stories high, originally used as a picker house, which will be used again for the same purpose, and is of the same construction as the mill. The other buildings consist of a two-story storehouse, 242 by 50 ft., of slow-burning construction; a mill building 124 by 43 ft., two stories high, of slow-burning construction; a one-story dyehouse 58 by 72 ft.; a boiler house, a wheel house, and a wooden office building.

All New Machinery Installed

The plant is being equipped as a complete woolen mill and will have an ultimate capacity of 10 sets of cards, of which six will be installed at the present time. The machinery will all be new, of the very latest design, and with the most modern improvements, and will be arranged so as to give the maximum amount of production with the minimum amount of labor. The areas of the floors and the dimensions of the buildings are such that this result is possible by the making of very few changes in the buildings.

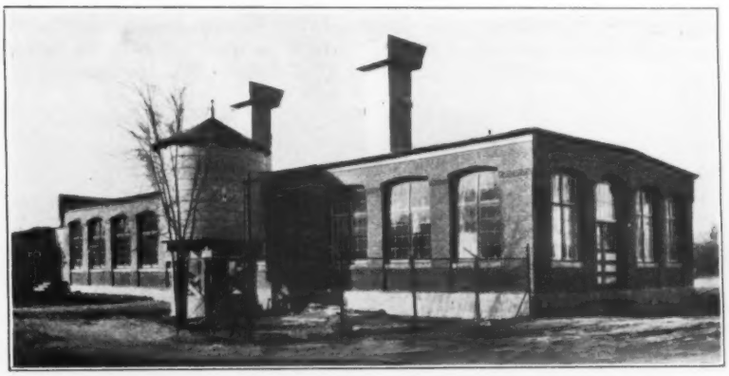
In the dyehouse the necessary trenches have been installed for the Franklin stock dye machines, and an electrical hoist will be used to load and unload the machines. The dryer will be equipped with features not ordinarily seen in plants of this type, which were worked out by the engineers. These dryer features include a Proctor & Schwartz housing and ventilating system, and a Reeves variable speed drive to adapt the speed to the character of the work and production desired, with remote control.

In the finishing department, the fulling mills and the washers have been installed in concrete machine trenches and every provision has been made to facilitate the operation and maintenance. The cloth dryer will be a Heathcote machine with an air-circulating system which will give it a very high capacity. The equipment has been installed so that the speed of the cloth can be varied from about one yard per minute to 20 yds. per minute.

Individual Motor Drives

There is a small water wheel in the plant, supplied by the Blackstone river, but for the most part the power required will be purchased. Insofar as possible, individual motor drives have been used on the machines, and as a result there is but little shafting required.

The water supply will be taken partly from the city and partly from a well located on the premises. The boiler house, without any alterations, will be operated at about 100 lbs. pressure to furnish steam for manufacturing purposes and heating.



New Stock and Piece Dyehouse of Taft Woolen Co.

Taft Woolen Co.

At the Taft Woolen Co., Caryville, Mass., a new stock and piece dyehouse which was built in the latter part of 1927, has just been put into operation. The building is 113x45 ft., one story high, and is connected to the existing storehouse, from which the supply of stock for the dyehouse will be taken. In this storehouse also are located the stock bins into which dried dyed stock is blown.

The dyehouse is of brick construction with wooden beams and plank roof and a vitrified brick floor on concrete base. There is a machine trench the entire length of the building in which will be installed three Franklin stock-dyeing machines and two piece-dye kettles. The Franklin machines will be equipped with electric hoists for loading and unloading the kiers.

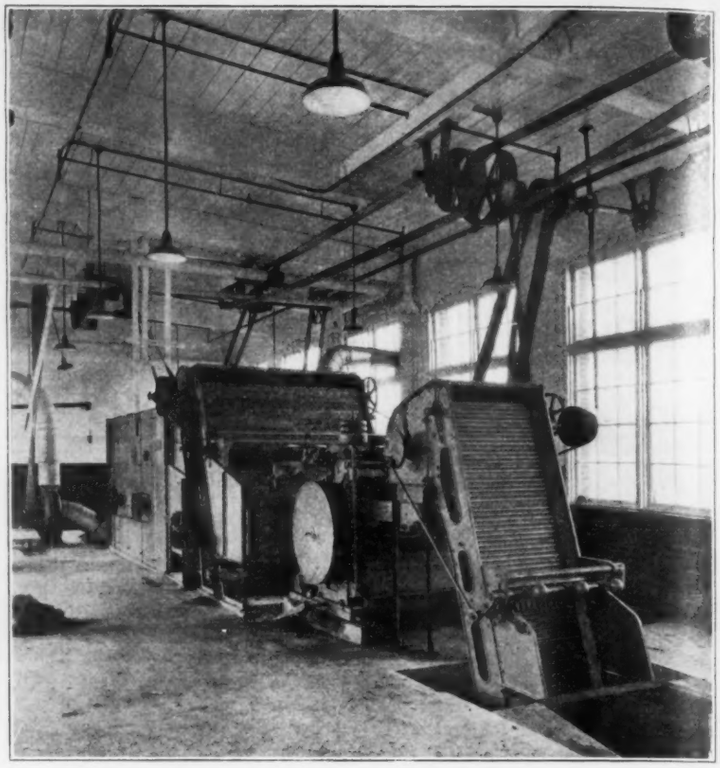
The piece dye kettles are equipped with ventilators to take care of the steam given off during the dyeing process to prevent the fogging of the room. A stock dryer has been installed in the dyehouse, into which the stock is delivered by an automatic feeder which receives the stock from a set of squeeze rolls set in front of the dryer. These squeeze rolls have an automatic feeder, with the hopper set down in a pit so that the top is flush with the floor to facilitate the loading. The stock from the dryer is picked up by a wool-blowing system and delivered directly into the stock bins. The building is equipped with automatic sprinklers and a good lighting system.

Schuster Woolen Co.

During the last year, the Schuster Woolen Co., of East Douglas, Mass., has taken steps to bring its stock dyeing in line with the more modern practice. In place of some of their hand tubs, they have installed two 500-lb. Franklin raw-stock dyeing machines.

Due to the fact that the level of the river into which the waste water is discharged was only some three feet below the dyehouse floor level, it was necessary to make a rather unusual installation. A concrete water-tight trench was built to sufficient depth so that the machines could be set down at the proper level and the discharge from the machines was piped to a closed sump in one corner, from which the hot liquors were taken out by a sump pump. The operation is entirely automatic and the pump starts and stops with the flow of liquor or water to the sump. It was further necessary to ventilate the trench in which these machines are set so as to pro-

Stock and Piece Dyeing Machines



Stock Dryer with Automatic Feeder

vide good conditions for the operation of the motors.

Hartford Woolen Co.

The Hartford Woolen Co., of Hartford, Vt., one of the old-established woolen mills making overcoatings and cassimeres, has during the last year started a more or less definite program of plant improvements. The first of these consisted of the modernizing and reinforcing of the fire protective system.

Much of the underground piping, which has been on a dry system, was relaid and changed over to a wet system. A 50,000-gal. hemispherical bottom steel tank on a steel tower was installed, replacing a much smaller wooden tank which was over the stair tower. In the main storehouse and office building, a dry pipe system of sprinklers was installed which put the plant under complete sprinkler protection.

The above changes in the service very materially improved the quality of their risk and, with the existing facilities, has put the plant under first-class protection. The other steps in the program will be taken up from time to time as conditions permit.

Broadcloth Mill in Arkansas

Magnolia Cotton Mill Company Has 5,000 Spindles and 125 Looms

THE new cotton weaving mill of the Magnolia Cotton Mill Co., at Magnolia, Ark., will soon be in production on carded yarn broadcloths. The plant contains 5,000 spindles and 125 looms. Arkansas, though it ranks high in cotton production and produces staples of excellent character, has only five cotton mills. The Magnolia Cotton Mill is the latest of these.

The broadcloth mill at Magnolia had its genesis during the Southern Arkansas Textile Development Tour, which a large group of Arkansas citizens made in 1926 on a special train to textile manufacturing centers in the Southeast. T. S. Grayson, J. O. Hutchinson, J. L. Davis, and J. B. Lee, all of Magnolia, and their associates, decided to build a cotton mill as a result of information gained on this tour. J. E. Sirrine & Co., of Greenville, S. C., was selected to design the plant and supervise its construction, and building contract was let early in 1927 to Thomas S. Byrne, of Ft. Worth, Tex.

The plant and machinery layouts of the Magnolia Cotton Mill were designed to permit of "straight line" methods of manufacturing. All manufacturing processes, except opening, will be carried on in a one-story building, 138 by 261 feet, of daylight construction with continuous steel sidewall sash. The roof, surmounted by a monitor, is supported by cast-iron columns and wood beams. The main building has a basement under the picker and cloth rooms. The opening equipment is housed in a building, 25 by 100 feet, adjoining the main building. A boiler house and water storage reservoir make up the two remaining units in the plant layout.

As Magnolia is a small town, it was necessary for the Magnolia Cotton Mill to provide housing for its help, and a village of 25 cottages, equipped with modern conveniences, has been built.

In the main building, preparatory and spinning processes will be carried on on one side of a sash partition running the entire length of the building, while slashing, weaving and inspection will be done on the other side. Cross partitions separate the various departments. The equipment in all departments has been carefully balanced to obtain "straight line" operation. While the Magnolia Cotton Mill is a complete, compact manufacturing unit, its future expansion was kept in mind when it was designed.

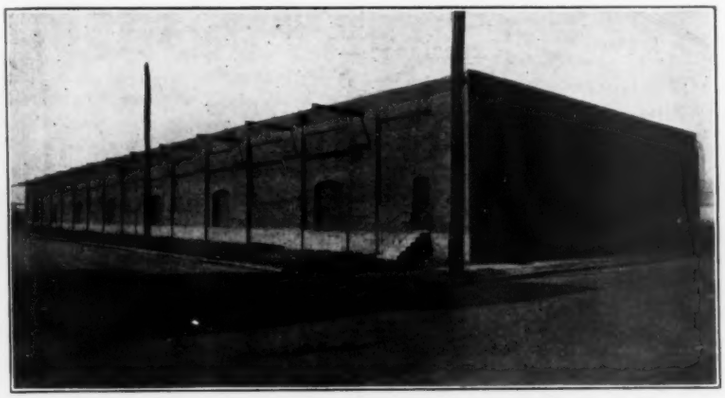
Saco-Lowell Shops built the preparatory, spinning and slashing equipment installed in Magnolia Cotton Mill. Looms were furnished by the Draper Corporation. Other supplying firms included The Bahnson Co., Winston-Salem, N. C., humidifiers; R. D. Cole Mfg. Co., Newnan, Ga., boiler; Allis-Chalmers Mfg. Co., Milwaukee, motors. Electric power for operating Magnolia Cotton Mill will be purchased from Arkansas Power & Light Co., Little Rock, Ark. The output of the new mill will be sold by McCampbell Bros., mill selling agents of New York. Officers of Magnolia Cotton Mill Co. are T. S. Grayson, president; J. O. Hutchinson and J. L. Davis, vice-presidents and J. B. Lee, secretary and treasurer. J. R. Wikle, formerly division manager of Ella division, Consolidated Textile Corp., Shelby, N. C., has been appointed superintendent of the Magnolia Mill.

Machinery in Course of Erection at Magnolia (Ark.) Cotton Mill

Enlargements Made by Pennsylvania Mills to Increase Output and Balance Operations

Magee Carpet Co., Derk Mfg. Co., and Wool Scouring Plant Increase—New Rayon Unit

ADDITIONS and improvements were made to many Pennsylvania textile mills and plants in nearby territory during the last year to increase the output and provide better manufacturing facilities. Among the developments carried out in accordance with drawings and specifications of The Ballinger Co., architects and engineers, Philadelphia, were a new boiler house for the Magee Carpet Co., Bloomsburg, Pa.; a new storage building for the Philadelphia Wool Scouring & Carbonizing Co., Philadelphia; a new weave shed for the Derk Mfg. Co., at Doylestown, Pa.; and a new rayon plant for The Viscose Co., at Parkersburg, West Virginia.



Storage Building of Philadelphia Wool Scouring & Carbonizing Co.; Street View Showing Provision for Truck Loading

Magee Carpet Company

The new boiler house erected at Bloomsburg, Pa., for the Magee Carpet Co., is 60 ft. wide by 81 ft. long, with a total height of 70 ft. Walls are of brick with steel windows having ventilating sash. Frame work is of steel with gypsum roof slab and tarred felt and slag waterproofing. Two 600-hp. water-tube boilers have been installed with provision for a future third boiler. Coal for the boilers is stored in overhead bunkers and is conveyed by hoppers to the stokers in front of the boilers.

A railroad siding parallels the building, with coal pockets underneath into which the coal is dumped and then elevated by a coal-handling system to the storage bins above. A mechanical ash-handling equipment with an elevated ash storage hopper is provided for ash removal from the boilers. The ashes from the ash storage hoppers are discharged by gravity through a metal chute to the railroad cars below.

All the equipment of the new plant is of the latest approved type for the most efficient generation of steam. Wherever possible the work is done by mechanical means and hand labor is eliminated. Draft for the boilers is provided by a radial brick chimney 10 ft. in diameter and having a height of 175 ft. above the ground. All the building work was done by The Dresser Co., Cleveland, Ohio.

New Storage Building

The new storage building for the Philadelphia Wool Scouring & Carbonizing Co., was erected at the southwest corner of Gaul and Tioga Streets, Philadelphia. The new building has a frontage of 80 ft. on Tioga Street, with a depth along Gaul Street of 302 ft. A siding of the Pennsylvania Railroad has been installed paralleling the west side of the building.

This addition is one story in height with brick walls and columns; beams, girders, and roof are of heavy timber construction. Floors are of cement, and tarred felt and slag are used for waterproofing the roof. Skylights are installed in the roof. Brick division walls with double fireproof doors divide the building into three fire sections. Foundations rest upon concrete piles. All the building work was done by Hughes-Foulkrod Co., Philadelphia.

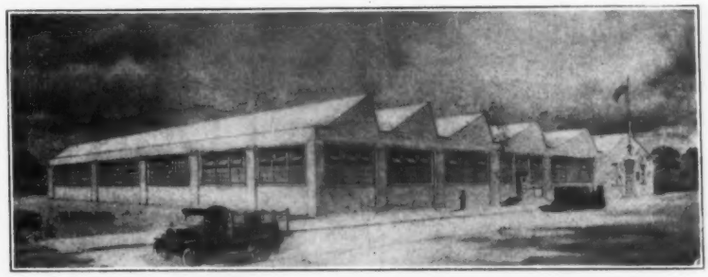
Derk Manufacturing Co.

The new weave shed erected at Doylestown, Pa., by the Derk Manufacturing Co., of Philadelphia, manufacturers of "Derwa Cloth," adjoins an existing building owned by this concern. The addition has a frontage of 126 ft. on a private street, and a depth of 152 ft. It is of sawtooth type, the sawteeth forming the entire roof area and facing north in order to obtain maximum daylight illumination without direct sunlight.

The walls are of brick and the roof trusses of steel, with wood roof planking. Floors have concrete base and wood wearing surface. The roof is made waterproof with tarred felt and slag roofing. Rolled steel sash with ventilating sections are provided for the side walls. Similar sash are used for the skylights, with the upper section made ventilating and controlled by devices for opening and closing in sections to obtain any degree of ventilation desired. Modern plumbing, heating, and electrical systems have been installed. All the building construction work was done by F. H. Kaiser Co., Pottstown, Pa.

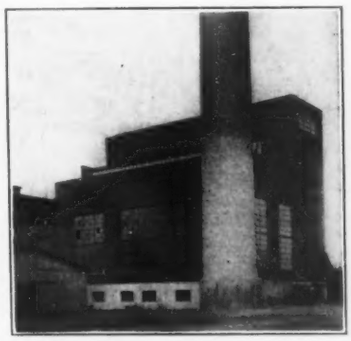
New Viscose Rayon Plant

The new manufacturing plant erected at Parkersburg, West Virginia, for The Viscose Co., was completed and started operations during the year. At the present time employment is being given to about 3,000 persons. The Viscose Co. also has plants at Marcus Hook and Lewistown, Pa., Roanoke, Va., as well as at Nitro, West Virginia.



Weaving Addition of Derk Manufacturing Co.

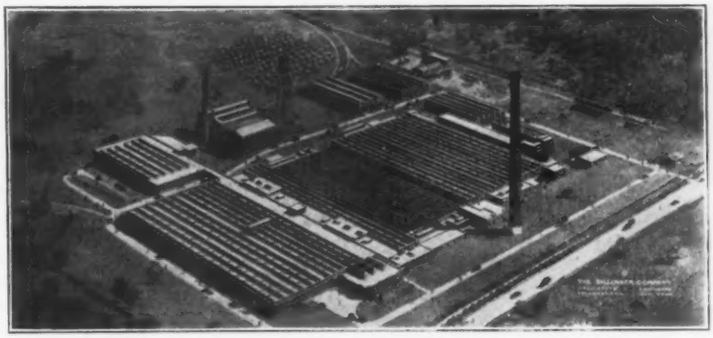
The new plant at Parkersburg occupies a tract of ground having an area of about 125 acres located along the Little Kanawha River. The buildings include the main manufacturing group, which is principally of one-story sawtooth type, together with auxiliary buildings, power and boiler houses, reservoir and filtration plant, and a large dining hall for the use of employes.



New Boiler House of Magee Carpet Co.

In general, the buildings have brick walls with brick on edge sills and stone coping. Roof construction is of steel trusses using the improved "superspan" sawtooth design with plank roof and asphalt waterproofing. The floors are of wood, cement, and asphalt to suit the various conditions of occupancy. There is a complete sprinkler system with a 100,000 gal. steel water tank on a steel tower; also a brick chimney 20 ft. inside measurement by 300 ft. high.

Six freight elevators are installed, also complete systems of plumbing and drainage, steam heating and power piping, and electric light and power wiring, together with water purification system. All building construction work was done by John P. Pettyjohn & Co., Roanoke, Va.



New Plant of The Viscose Co. at Parkersburg, W. Va., Which Started Operations During 1927

Ready to house a mill development —small or large

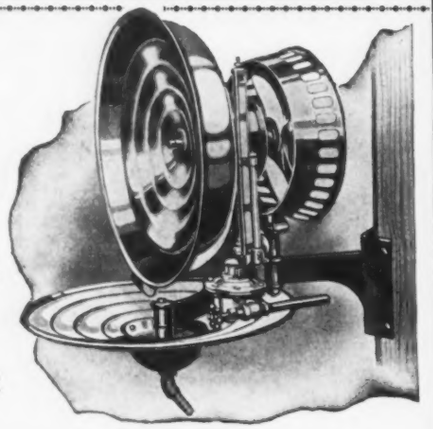
Industrial developments are our specialty. During the past thirty years this field has been thoroughly covered by our organization.

A textile building enterprise—whether a single unit or the large array of structures that go to make an industrial town — can be satisfactorily handled through Nicola. Our long experience — our specialization in industrial developments — have effected real economies for our clients time and again.

Our past building achievements breed confidence in the brand of service we can give you. We shall gladly figure on your needs — small or large.

THE NICOLA BUILDING CO.
ESTABLISHED 1898
Building Contractors, Builders of Complete Plants and Industrial Towns, Power Houses and Shops
General Offices: Penn. Ave. and Denniston St., Pittsburgh, Pa.

"Localized" Moisture



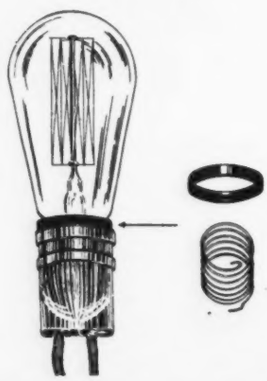
THAT'S the whole idea of the BAHNSON HUMIDIFIER. Each unit operates independently . . . feeds out the moisture as ***local*** conditions demand — not as a remote control decrees.

That means the atmosphere in each section of your spinning room, weave shed, knitting room — any department — has the correct water content.

Your yarns or fabrics are bound to process more easily, more uniformly . . . with a whale of a lot less trouble. And it costs little to run a series of these humidifiers! ***Write us for details.***

THE BAHNSON COMPANY
93 Worth Street, New York
Factory: Winston-Salem, N. C.

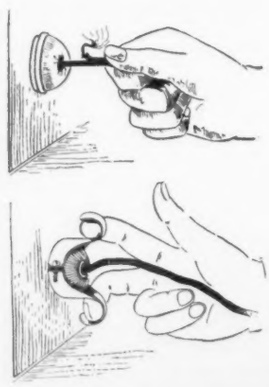
REN — LOCK



Fits all standard lamps and all standard brass and porcelain sockets and "Hubbell" weather-proof sockets.

Sold Direct Only

PULL A PLUG



Fits standard attachment plugs. No rewiring.

Prevents broken wires, broken plugs, and burnt-out fuses.

$1.50 Per Dozen

REN MFG. CO.
22 Mt. Vernon St., Winchester, Mass., U. S. A.
Cable Address: Renlock, Boston
Write for Particulars

Full-Fashioned Hosiery Plant Established at Decatur, Ala., By Cooper, Wells & Co.

New Mill Adjoins the Company's Seamless Hosiery Plant—Planned for Future Extension

COOPER, WELLS & CO., of St. Joseph, Mich., began the manufacture of seamless hosiery at Decatur, Ala., in 1921. The plant proved so successful that a modern building was erected in 1923. When J. O. Wells, president of the company, decided to build a new mill in order to go into the production of full-fashioned hosiery, he made an extensive investigation of possible sites. During this survey he visited all the recognized hosiery centers of the East, South, and Central-West, and was convinced that the site of his first mill was the logical location. In this decision he was influenced by the natural advantages of the location.

This section of the South contains remarkably high-grade native white labor. The workers are very readily trained in the production of hosiery and are faithful and loyal in their work. Then, too, Decatur is located only about 30 miles from the Wilson Dam, at Muscle Shoals, which guarantees an abundance of electrical power, available at all seasons of the year and at low rates. Decatur is located on both the Southern Railway and the Louisville & Nashville Railroad, and the latter railroad maintains excellent freight and express schedules to the mother plant at St. Joseph.

W. H. Sears and P. B. Shepherd, of Chattanooga, Tenn., the architects who had charge of the first building at Decatur, were commissioned to prepare the plans for this new plant. The architects have had years of extensive practice in hosiery mill construction, and have designed many of the leading plants in the Chattanooga district.

Provides for Extension

The building, as decided upon, has a frontage of 140 ft. and a depth of 100 ft., in addition to an office 24 by 34 ft. The rear wall of the mill is of tile and the construction is such that this wall can readily be removed in order to permit a future extension. A deep red smooth shale face brick is used, trimmed with stone and terra cotta. It was realized that an attractive design and beautiful surroundings add to the contentment and efficiency of labor, and a pleasing architectural design was demanded by Mr. Wells.

Interior View, Cooper, Wells & Co. Full-Fashioned Hosiery Mill

The building is of wall-bearing brick with projecting steel sash. The roof is carried on steel trusses resting on walls and on interior steel "H" columns. The side walls are 15 ft. in height. Every effort was made to keep the roof construction attractive in appearance. To this end all gusset plates were designed for shape and all diagonal ties and braces were left out, rigid struts being used instead.

Ample steel sash are provided in the side walls and are of the projecting type. There are also five rows of vertical sawtooth monitors extending from front to rear. The sash in these monitors are factory section with pivoted vents controlled by worm gear operators. By means of copper condensation gutters on the inside of the mill immediately below them, these sash are free from leakage. They are preferred to the usual sloping type sash on account of their freedom from condensation leakage and the fact that they can be kept open in all but the most severe driving rains. By the location of exterior sash and the skillful placing of the sawtooth monitors all shadows are eliminated.

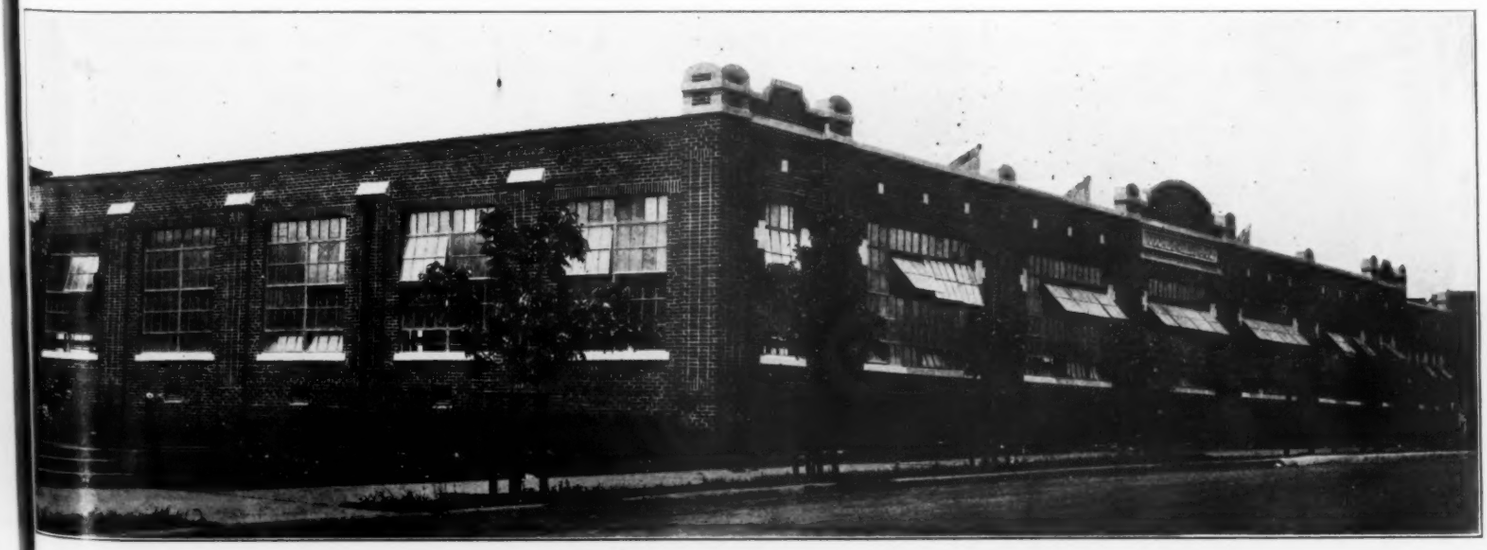
Roof Makes Cool Building

The roof construction is of poured gypsum slabs with rail steel purlins extending from truss to truss, and, together with a built-up asbestos roof with a white top, has proved very effective in making a cool building during the summer. It has been the experience of the owners on other buildings that a white top roof is very effective in reflecting the summer sun. In some tests on their seamless plant at Decatur, the temperature was lowered as much as 10° after the white top was applied. These results, which have been obtained on their buildings and in similar experiments conducted by the Pullman Co., seem to confirm this opinion. The floor construction is of reinforced concrete for the entire area, except that the aisles between the machines are of wood inserts.

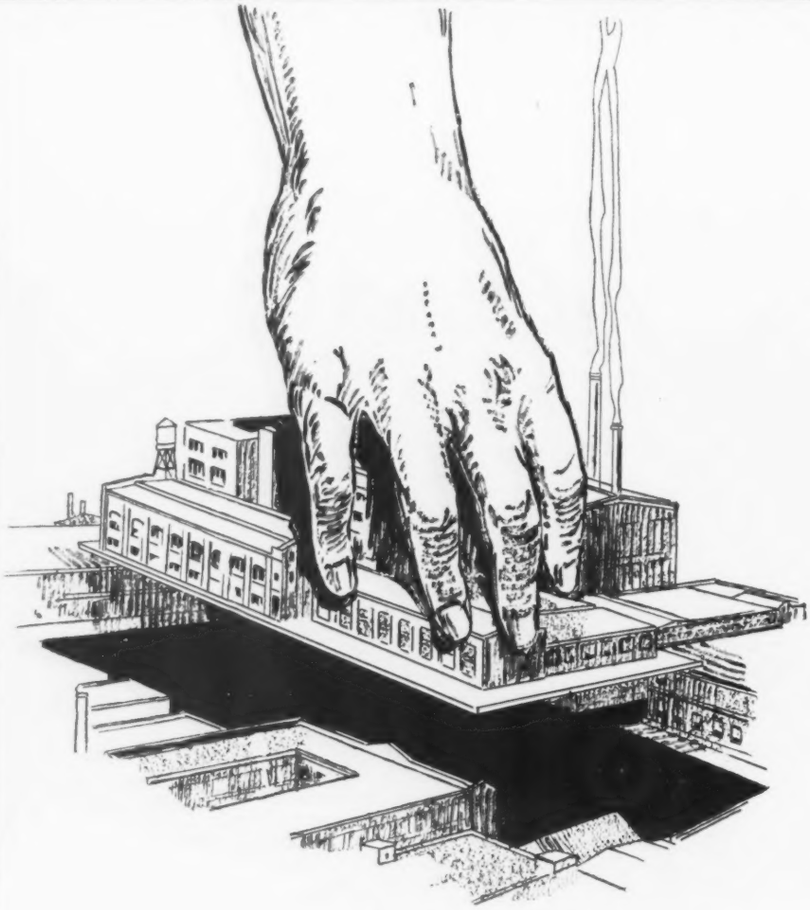
A unique device for securing a circulation of the air at the floor is the use of waterproof ventilators at the floor line. These are controlled by shutters. This insures a free circulation of air on the floor and adds much to the comfort of the operatives. All windows are equipped with venetian shades manufactured by the Burlington Venetian Blind Co., Burlington, Vt.

Three Machines Across Building

Due to its width of 140 ft., three machines are placed across the width of the building allowing two leggers and one footer to be set in each row. The building is designed for 42 machines, with all interior columns set between the backs of the machines,



Full-Fashioned Hosiery Mill of Cooper, Wells & Co. at Decatur, Ala.



Move Your Plant *to Proven Ground*

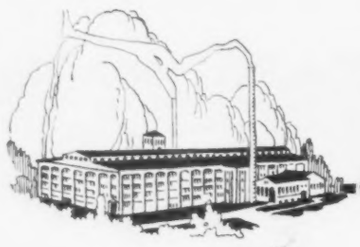
A consistent record of low production costs dating back more than fifty years is what the Augusta, Georgia, district offers mills contemplating Southern location. Hand in hand with these economies are equally impressive facts regarding labor efficiency.

Freight rates on mill products likewise favor the Augusta manufacturer. And conditions of humidity and temperature are almost ideal!

Whether you're looking for trained male or female labor or intelligent, native-born, white labor that can readily adapt itself to your manufacturing processes, you'll find a favorable situation in Augusta.

The water of the Savannah River—one of the largest rivers in the United States—is specially adapted to the needs of dyeing, bleaching, finishing and rayon plants.

Augusta's location has fostered the steady development of its textile industries—and its unusual advantages for *your* plant will be apparent upon investigation. For detailed information with reference to your particular requirements write:



CHAMBER OF COMMERCE

Augusta

GEORGIA

leaving all aisles and runways entirely free from obstructions. Nine Karl Lieberknecht machines are in operation and 18 more will be installed as rapidly as delivery is made in the spring of 1928. The mill is completely equipped with Lupton steel knitter benches, topping tables, seaming and looping tables.

A great deal of attention was given to the toilet rooms and the plumbing. All toilet rooms have tile floors and steel stall partitions. All toilets are equipped with flush valves and individual lavatories are provided in each toilet room. Ice water is provided by Frigidaire equipment and is piped to drinking fountains located at several advantageous points.

All methods of lighting were given consideration. The system adopted is a uniform intensity over the entire mill by means of standard R. L. M. reflectors, with a few extra lights placed over the tables. The units are mainly 300 watt, and were designed to give a light intensity of 12-foot candles on the working plane. The system adopted has more than met the approval of the management. All wiring is in rigid metal conduit with each circuit controlled from central panel boards. All power lines are also carried in overhead rigid conduit, controlled from its power cabinet.

The heating plant is located in the basement of the adjoining old building, and heating is by means of overhead mains using eight large ILG unit heaters with Johnson temperature control, which maintains a constant temperature of 78°. The unit heaters are very satisfactory. Their use removes all unsightly pipe coils or radiators from the walls, and the fans are of great assistance in circulating the air in the summer.

It is believed that this is the first full-fashioned one-story mill in the South using three rows of machines, and with concrete floor for machine setting and wood floors for the operatives. Owing to the fact that the building is all of steel and brick, with gypsum roof, it is fireproof in construction but is sprinkled throughout.

This building was erected by Batson-Cook Co., of West Point, Ga., who are widely experienced in this class of work. The heating was installed by the Poe Piping & Heating Co., of Greenville, S. C. The electric wiring was done by the Twin City Electric Co., of Decatur, Ala. The plumbing was done by John Cuneo, of Chattanooga, and the sprinkler work by Crawford & Slaten Co., of Atlanta, Ga.

Full-Fashioned Silk Hosiery Mill

Further Diversification of Industry at Springfield, Massachusetts

THE Harris Silk Hosiery Co. was incorporated in April, 1927, to manufacture high-grade silk hosiery. A modern mill, especially planned for proper lighting and the highest possible efficiency in production, has been erected on Page Boulevard, Springfield, Mass. As this is the first hosiery plant to be established in Springfield, it is of added interest as further diversifying the industries of this famous New England city.

The mill is of steel and brick construction, 90 ft. wide, 140 ft. long, and about 14 ft. high. It is a one-story structure, in which the offices and utilities are located at the front of the building, connecting directly to the main manufacturing room. The heating plant is located at the rear. As the building is one-story high, one large sawtooth skylight was placed over the middle aisle, facing directly to the North, which assures ample daylight for the fine manufacturing operations. In addition to this sawtooth skylight, large Fenestra steel sash, supplied by the Detroit Steel Products Co., was placed at all sides of the building and provides unusually good light throughout the entire area.

Few Obstructing Columns

The floor has been laid directly on solid ground and consists of a 7-in. reinforced concrete slab, on which has been placed 1 in. of "Tar-rok." Imbedded in the "Tar-rok" is a 2-in. thickness of kyanized spruce plank, and on top of this is a 1-in. hardwood flooring. This construction makes a very rigid foundation for the knitting machinery. In addition to the special floor construction, the steel work is worthy of consideration, as it has been so designed that there are only eight columns in the entire floor space.

The building is fully protected by sprinklers. Heating is accomplished through cast-iron radiation supplemented by pipe coils, all of which are controlled by thermostatic regulators. The heating plant consists of a Mills cast-iron boiler, furnished by the H. B. Smith Co., Westfield, Mass., and the steam is generated by a special Electrol oil burner supplied by the Electrol Oil Burner Co. Process steam is also furnished by an Electrol oil burner. All heating equipment was installed by the J. J. Cotter Co., of Springfield. Power is purchased from the United Electric Light Co., the local utility.

General and Local Lighting

The electric lighting equipment was installed by the Richard A. Turner Co., of Springfield, and includes both general and local lighting. The general illumination consists of 100- and 200-watt units with R. L. M. reflectors on approximately 20-ft. centers. Owing to the nature of the work, which necessitates at times a high intensity of light, each knitting machine is equipped with local lighting provided by adjustable drop cords with 25-watt lamps, 11 to a machine. Each drop has a steel bowl reflector and is individually switched. Each group of drops is controlled by means of a ceiling cord switch. The seamers, loopers, and the cone and skein winders are lighted in much the same manner, except that large wattage lamps are used and the spacing is proportionately greater.

The power wiring is installed to insure as far as possible continuity of service by means of independently grouping the machines in sets of five through power distribution panels. While almost all of these conduits are exposed so that the installation will be more flexible, the feeders to the machines have been run in the floor construction, leaving both aisles and head space entirely free from obstructions. The knitting machines are operated by variable speed motors controlled by adjustable two-speed starters.

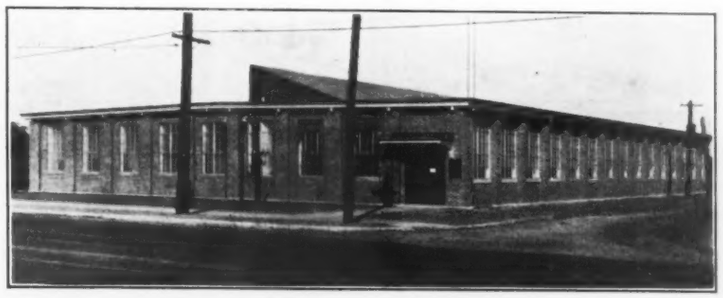
The first unit of machinery consists of eight 45-gauge and four 51-gauge, 20-section full-fashioned knitting machines. The finishing machinery consists of loopers, made by the Southern Textile Machinery Co.; seaming machines, made by the Union Special Machine Co.; and boarding machines, made by Proctor & Schwartz. For the present the company will do no dyeing or bleaching. These machines, as well as the knitting machinery, are direct motor-driven.

For the present and until future expansion takes place, the knitting and finishing is all done on one floor, the knitting machinery being installed at the eastern end of the building and the finishing machinery at the front.

The building was designed by Lockwood, Greene & Co., engineers, Boston, and was erected by the Adams & Ruxton Co., Springfield. The building has a capacity of 20 machines, and sufficient land is owned by the company to permit the expansion of the mill to contain 100 machines or more.

The company is under the management of men who are successful manufacturers. The president and general manager, Edgar G. Harris, was for six years manager and secretary of the Holyoke Silk Hosiery Co., Holyoke, Mass., and for 11 years was connected with the McCallum Hosiery Co., Northampton, Mass. M. Hazen Chase, treasurer of the company, was formerly associated with the American Writing Paper Co., as manager of four of its mills. John M. Williams, vice-president and secretary, is a well-known real estate operator of Springfield, and was formerly secretary of the Moore Drop Forging Co., of Springfield.

Arrangements have been made with Lee & Cowan, 389 Fifth Ave., New York, selling agents, who specialize in the sale of merchandise of the better class, to handle the entire production.

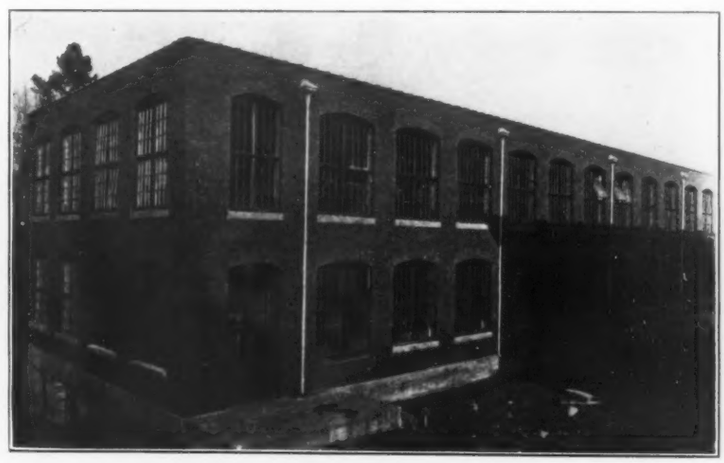


New Mill of Harris Silk Hosiery Co., Springfield, Mass.

Pepperell Mfg. Co.

Addition Built to Dyehouse at Georgia Plant

A little over a year ago the Pepperell Manufacturing Co. took over the plants of the Massachusetts Cotton Mills at Lowell, Mass., and Lindale, Ga. Under the new management ex-



Addition to Dyehouse at Lindale, Ga.

Ideal Climate—Year 'Round Recreation—Native American Labor—Boost Production In Houston.

Houston Offers~

- Extremely Favorable Raw Material Market
- Lower Investment
- Low Transportation Costs to World Markets
- Low-priced Power and Fuel
- Adequate Native Labor
- Excellent Banking Facilities
- Low Taxation
- Favorable Legislation
- Low Cost for Building Sites
- A Fine Spirit of Co-Operation

Native American labor is plentiful in Houston. The type of labor found there is composed of people who own their own homes and have their own churches, schools, and civic interests.

Mild year 'round climate, ample recreation facilities, adequate intelligent female workers and a 54-hour weekly labor law contribute to making labor conditions ideal.

Labor, educated in American schools, able to understand and respond to your own language, is plentiful. These workers are co-operative, loyal and contented.

There has never been a mill strike in Texas. Undesirable labor elements which break down morale and cause strikes are not found in Houston, and strikes, as you know, are highly expensive.

A detailed personal survey of the labor situation and other factors favorable to the cotton milling industry will be furnished you on request.

INDUSTRIAL DEPARTMENT
CHAMBER of COMMERCE
HOUSTON, TEXAS

tensive plant changes have been made at both mills, including the erection of an addition to the dyehouse at the Lindale Mill, on which construction was started last fall. This dyehouse addition is 54 ft. wide and 150 ft. long, two stories high.

Due to the fact that this building was constructed on the banks of Silver Creek and extended partly into the creek, the first floor was built of reinforced concrete construction of the beam and girder type. The second floor and roof are of mill construction, with steel beams and columns, plank floors with maple-wearing surface, and Barrett specification roofing.

The addition was built under plans and specifications of F. P. Sheldon & Son, engineers and architects, Providence, R. I., by Batson-Cook Co., general contractors of West Point, Ga., and gives needed facilities for the increased production of cheviots, denims, chambrays, canton flannels, and other colored goods at the Lindale mill.

Cone Group of Mills Carry Out Large Rehabilitation Program and Increase Capacity

Proximity, White Oak, and Revolution Mills, and Proximity Print Works Enlarged and Modernized

FOR the last two years the Cone group of mills at Greensboro, N. C., consisting of the Proximity Mfg. Co., the White Oak Cotton Mills, the Proximity Print Works, and the Revolution Cotton Mill, have been undergoing an extensive rehabilitation program. New buildings have been erected where departments have outgrown their original space, and old buildings have been repaired and modernized. Machinery has been reorganized, power plants improved, motor drives installed, modern lighting and humidifying systems introduced, and process-piping and steam-heating arrangements thoroughly revised. The magnitude of the work involved in bringing these mills to a state comparable to their original standing as models of modernness and efficiency is most forcefully denoted by the cost of the work, which was around $4,000,000.

White Oak Weaving Building

The White Oak weaving building was the first to undergo repairs. Old wooden sawteeth with brick ends were removed and new steel frame work sawteeth with steel sash built. Instead of extending out to the side walls as in the case of the old sawteeth, in the new construction they were shortened one division on each end. Old wooden columns supporting the sawteeth were replaced with cast-iron columns. The entire roof was insulated and renewed. A modern lighting system was installed throughout.

A reorganization program had previously been planned for this building by the owners, and was now begun. During the period of the last three years, 2000 old looms were replaced by new Draper looms; the old large-group motor drives were replaced by individual drives, and old shafting and motors removed. A new cloth room was also built by the owners, and cloth-room machinery which formerly occupied the basement was moved into the new building. The space vacated was reoccupied with 500 almost new looms moved from the Proximity mill.

Proximity Weaving Building

When the work at White Oak was nearing completion, the much larger program at Proximity Mill was begun. The old roof of the weaving building with one long transverse monitor was removed and a new roof with 10 cross monitors built. The surface was insulated.

The old wooden construction in daylight side-wall area was replaced with steel columns and steel sash. Steel sash was also placed in all remaining first-floor window openings and all full-length windows in the basement. New concrete platforms and steps were built at the entrance doors on the east side. A new tying-in room 26x100 feet, was built in the courtway between the weaving building and the dyehouse. That part of the weave-room wall adjoining was torn out and replaced with a sash partition.

The old heating system was retained but was augmented by the installation of nine Venturifin units. All returns were piped back to the boilers. A new and modern lighting system was installed.

Part of the looms from this building had previously been moved to the basement of the White Oak weaving building, and the remainder were scrapped. In their place, 1440 new Draper looms with individual motor drives were installed.

Spinning Mills

Next in order of repairs at Proximity were the spinning buildings Nos. 1 and 2. These buildings were erected at different times and No. 1, which is the older, had the greater amount of repairs. In general, however, repairs to both were of a similar nature. All defective timbers and planking in both roofs and monitors were replaced with new timbers and planking. Steel sash replaced the wood in the monitors and new roofing was laid on No. 1 mill roof and monitor. Roofing material on No. 2 mill was reinforced by 3-ply tar-and-gravel roofing after the old gravel was removed. Both heating systems were revamped and returns brought back to the boiler room. A new lighting system was installed in No. 2 mill.

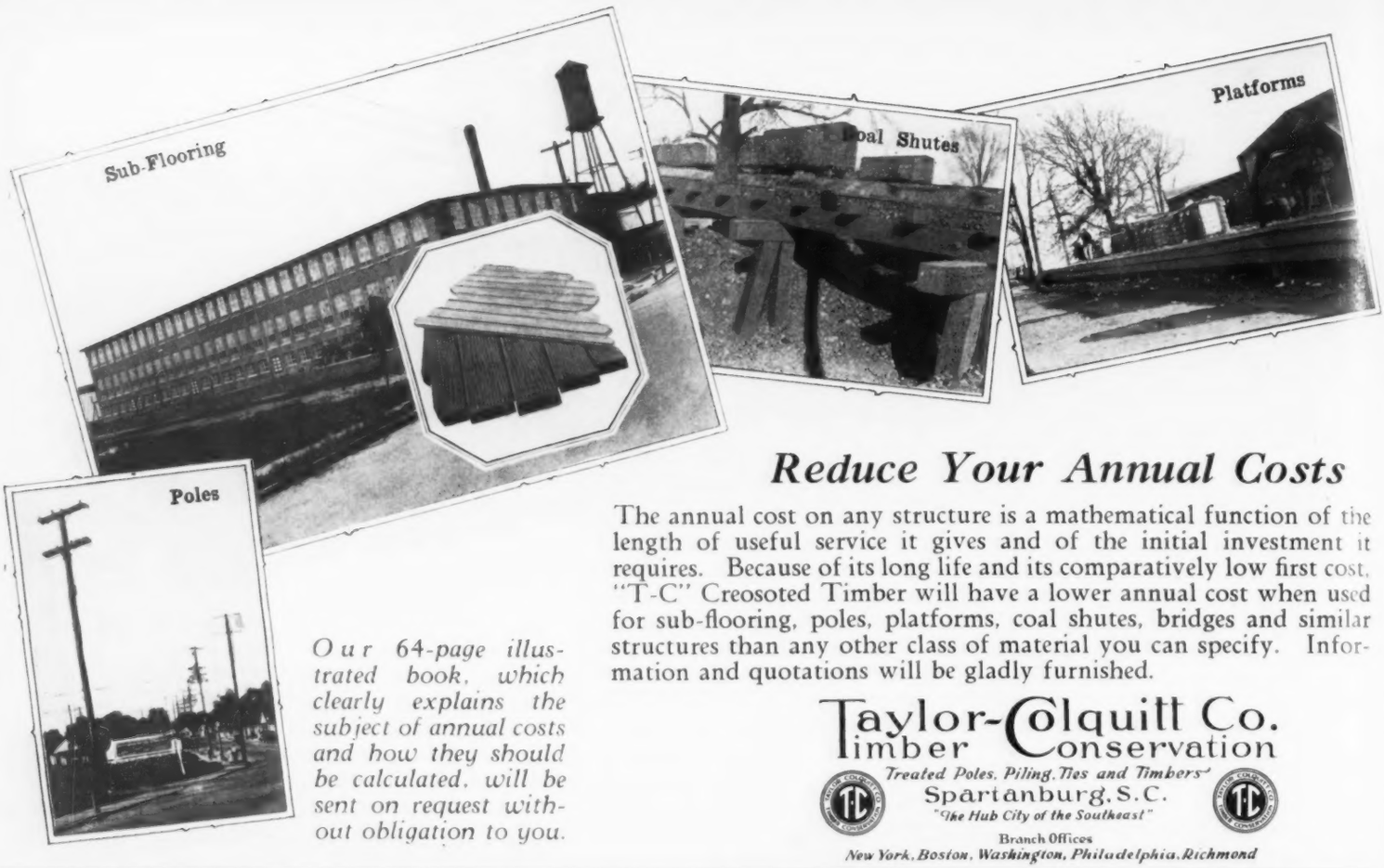
The textile machinery reorganization in the spinning mills was made along a certain prearranged program where one mill would produce warp yarns only, and the other filling. On account of the building size and manufacturing conditions it was found advisable for No. 1 to produce filling and No. 2 warp yarns. Due to wear and obsolescence many of the cards, all of the roving, and all of the spinning in No. 1 mill were scrapped. The roving and spinning machinery was replaced with frames moved from No. 2 mill. New cards were purchased to replace those thrown out. The spinning, which was formerly driven by large group motors in No. 2 mill, is now driven by individual motors and Texrope drives.

In the reorganization of No. 2 mill, 25,000 spindles of new tape-driven spinning of latest specifications and new roving was installed. Card room machinery was rearranged and space made for additional cards, which were purchased and installed. All old belting and shafting was removed and individual motors and chain drives installed for spinning. Small groups were arranged for roving and cards. To facilitate the better handling of stock in process at No. 2 mill, a new elevator shaft was erected outside of the south-end wall of the building.

Dyehouse, Slasher, Beam Storage

Due partly to decay in the dyehouse, slasher, and beam-storage building, and partly to the desirability of providing better light and greater operating height for new chain-warp dyeing equipment the second floor over the dyeing machinery was torn out, allowing a greater ceiling height from the first floor to the roof. Cement plaster partitions were erected around the dye-machinery area from the second floor to the roof, separating the dyehouse from the slasher room and other departments on the

White Oak Mills of Proximity Manufacturing Co.



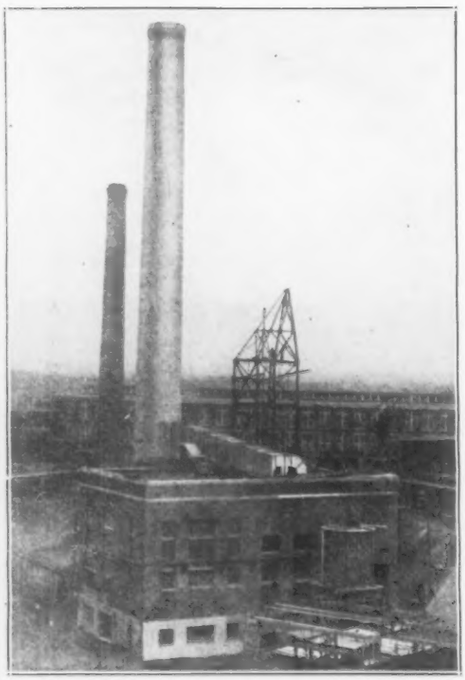
Reduce Your Annual Costs

The annual cost on any structure is a mathematical function of the length of useful service it gives and of the initial investment it requires. Because of its long life and its comparatively low first cost, "T-C" Creosoted Timber will have a lower annual cost when used for sub-flooring, poles, platforms, coal shutes, bridges and similar structures than any other class of material you can specify. Information and quotations will be gladly furnished.

Our 64-page illustrated book, which clearly explains the subject of annual costs and how they should be calculated, will be sent on request without obligation to you.

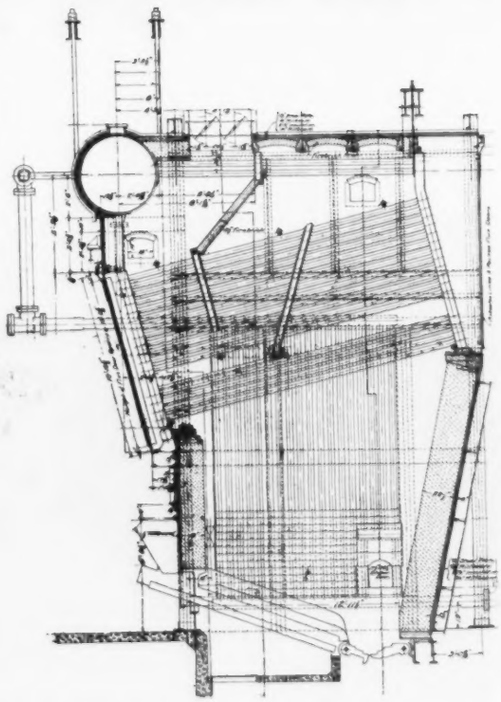
Taylor-Colquitt Co.
Timber Conservation
Treated Poles, Piling, Ties and Timbers
Spartanburg, S.C.
"The Hub City of the Southeast"
Branch Offices
New York, Boston, Washington, Philadelphia, Richmond

WALSH & WEIDNER BOILERS



were chosen for the new power plant of The Cannon Mfg. Co., Kannapolis, N. C. Designed by Thos. E. Murray.

The installation consists of 3 620 H. P. 300 lb. pressure Walsh & Weidner Forged Steel Sectional Header Water Tube Boilers. These boilers are built for pressure to 1600 lbs. and in units to 3500 H. P.



WATER-WALLS

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THE WALSH & WEIDNER BOILER COMPANY, Chattanooga, Tenn.

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Old Roofs As Well As New Can be Easily Insulated With Armstrong's Corkboard

CONDENSATION can be stopped in old mills as well as new by insulating the roof with Armstrong's Corkboard, applied either directly to the roof-deck or over the old roofing. Sufficient thickness can be laid *in a single layer*, and consequently at a low cost for labor.

By preventing ceiling sweat and drip, with its consequent damage to machinery and goods, Armstrong's Corkboard on the roof quickly pays for itself, and in addition effects a considerable saving in fuel by reducing the loss of heat. In summer it is equally effective in shutting out the heat of the sun, and thereby maintaining more comfortable working conditions in the mill.

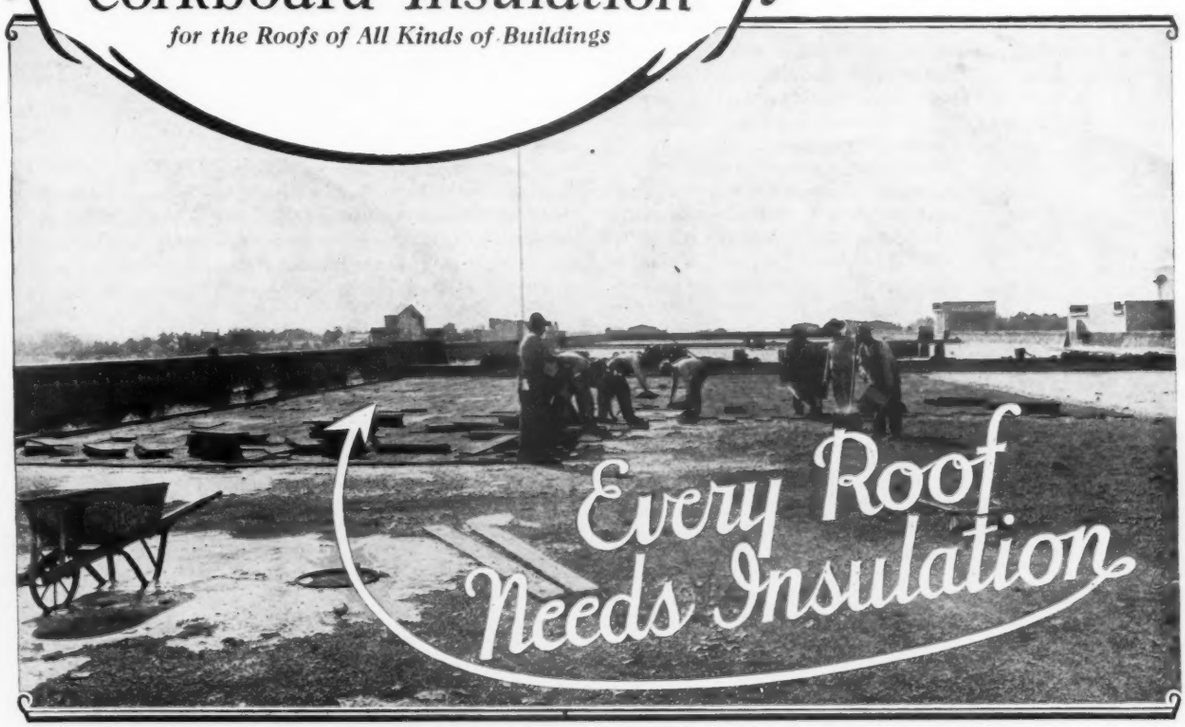
This Book Free

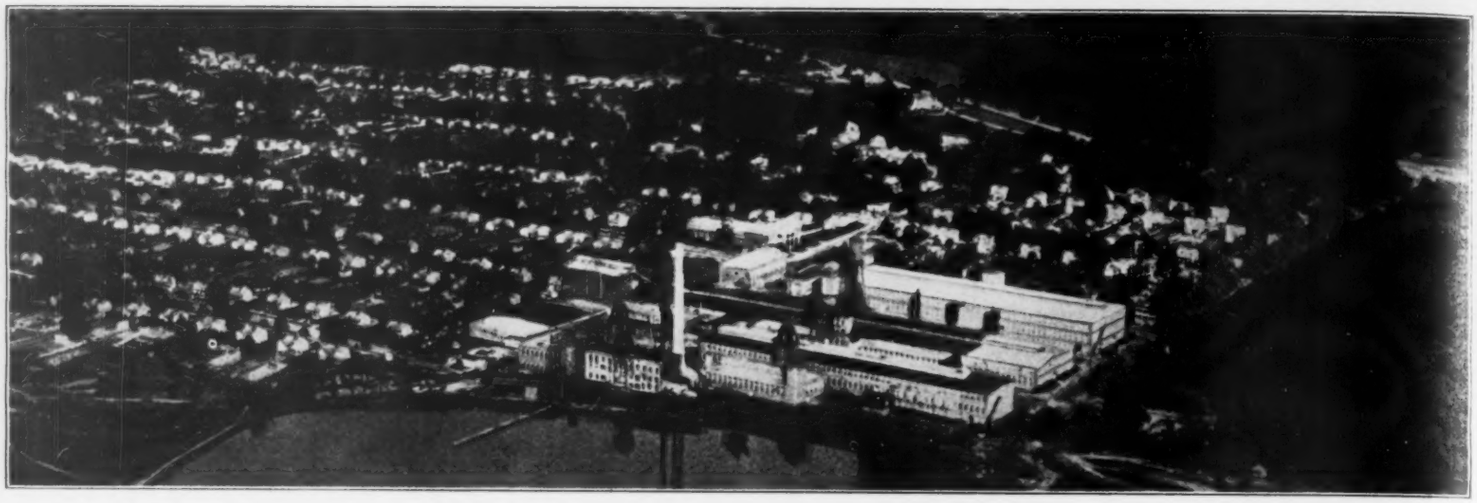
"The Insulation of Roofs to Prevent Condensation" is a booklet of valuable information of interest to mill executives. Write for it. Armstrong Cork & Insulation Company, 216 Twenty-fourth Street, Pittsburgh, Pa.; McGill Building, Montreal or 11 Brant Street, Toronto.

Armstrong's Corkboard Insulation

for the Roofs of All Kinds of Buildings

83,500 square feet of Armstrong's Corkboard were laid over the old roofing on the Winnsboro Mill, Winnsboro, S. C. Lockwood, Green & Company, Engineers.





Proximity Mills, Greensboro, N. C., Recently Revamped

second floor. Tying-in machinery was moved from the second floor to the new tying-in room next to the weave room. Slashers and size-mixing machinery were moved into another part of the second floor. A new size-circulating and slasher-exhaust system was installed. A new toilet was built and equipped on the second floor. New steel gratings were built around the dye machines, replacing old wooden platforms. Cast-iron columns replaced wood on both floors. New doors and partitions were built in walls connecting the dyehouse and the new tying-in room.

All roof and monitor planking and a large portion of timber were removed, and new timbers treated to resist dyehouse vapors were installed and additional monitors built. All old sash was removed from the first and second floors and the monitor; and new steel sash, galvanized to prevent corrosion was installed.. All process and steam-heating piping was revamped, making these systems modern, all returns being brought back to the boiler house. A new and modern lighting system was installed throughout the building.

Raw stock dyehouse roofing and monitor planking timbers showing any decay were replaced with treated material and new roofing laid over the entire area. All old sash was replaced with cypress frames and sash.

The picker building adjoining the No. 1 spinning mill was re-roofed. A new and efficient cotton-conveying system was built at Proximity Mills, connecting the central opener room with raw-stock dyehouse and the picker rooms at Nos. 1 and 2 spinning mills. The pipe lines were placed on steel-frame supports, and a plank walkway was provided alongside for inspection and repairs. A flexible arrangement has been provided for handling both raw cotton and dyed stock.

Power

In the early use of electric power at these mills the existing supply was 40 cycle; consequently the first motor drives were with 40-cycle motors. At later dates power units of 60 cycles were installed at the Proximity Print Works and White Oak Mills. When the revamping program was begun, both frequencies were in use. Approximately 3,000 kw. of 60-cycle power was generated locally, and the remainder purchased from the Southern Power Co. The frequency change from 60 to 40 cycle to supply old motors was made through a frequency changer set. Voltages in use at that time were 220, 550, and 2300. As 40-cycle equipment had become obsolete, and multiplicity of voltage was uneconomical for the maintenance of spares and parts, it was planned to convert all power equipment to a standard of 3-phase, 60-cycle, and 550-volt. This will be accomplished when the last changes now in progress are completed.

All condensation from both process steam and heating systems will be returned to the boiler plants. The new power plants have been designed both with the consideration of process steam requirements and for power demands. A 1,000-kw. extraction-type turbo-generator was installed at the Proximity plant in 1925, and a 3,500- and a 1,500-kw. unit are now being installed at White Oak and the Proximity Print Works, making a total of 6,000-kw. installed during the revamping program. These units will not supply all of the power demands and the remainder will be purchased from the Southern Power Co. The old 2,500-kw. unit at White Oak is retained as a standby. When the new power plant at White Oak is completed, the old boiler plant containing 28 boilers will be reduced to 10 and maintained for whatever use that may arise. Old boilers at the Print Works will be removed.

The power plant completed and placed in operation in 1925 at the Proximity Mill has a 1,000-kw., extraction-type, 3-phase, 60-cycle, 600-volt turbo-generator. The boiler equipment is one 779-hp. water-tube boiler with stoker operating at 200 lbs. steam pressure and 100° superheat, feed-water heater, surface condensers, and spray pond. Steam is extracted for dyehouse and building heating use at 15 lbs. pressure.

Modern and Economical

The new power plants for the White Oak Mill and the Proximity Print Works now under construction will have many features that will make them very modern and economical in operation. Steam will be supplied to both plants for power generation and processing uses by the one boiler plant located at White Oak. The power unit here will be a 3,500-kw. General Electric Co. double-extraction-type unit operating at 400 lbs. steam pressure and 200° superheat. The first extraction stage will be at 150 lbs. and 100° superheat, and this will be delivered to a 1,500-kw. General Electric Co. single-extraction-type unit at the Print Works, approximately 2,000 ft. from White Oak.

The second extraction stage will be at 20 lbs. pressure for dyehouse and heating use at White Oak, while the extraction stage of the Print-Works unit will be 15 lbs. Boiler equipment will consist of two 863-hp. Heine boilers, air preheater, Fin furnaces, and coal pulverizers furnished by the Combustion Engineering Corp.

Complete coal-handling equipment is being installed. Feedwater heaters will be of deaerating type. The overhead pipe lines supplying steam to the Print-Works unit will be carried on steel towers and have expansion U-bands. The supply line will be 14-in. pipe and return 3-in. pipe. Foster-Wheeler Corp. condensers will be used at both plants.

New Additions to Buildings

The new addition to the Proximity Print Works completed in 1926 is a one-story and part basement L-shaped building having a total length of 518 ft. and width of 102 ft., except at the front end, which is 156 ft. 9 in. wide. Construction in general is reinforced concrete, the finished basement areas at both ends are concrete pilasters and mushroom columns. The one-story section between the two ends and approximately 400 ft. long is of daylight construction. The entire roof is concrete beam and slab construction supported by cast-iron columns. One inch of cork insulation was placed over the entire roof, and this was covered with 5-ply tar and gravel roofing. All steel sash are galvanized. The new construction adjoins the old building on the front and is connected to it at several places by passageways. A complete system of drains and pipe tunnels was constructed to serve both old and new buildings.

The heating system in the new building is the Venturifin type of unit

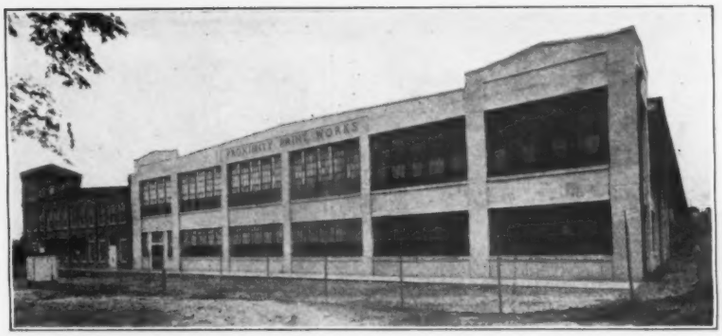
New Warehouse at Proximity Manufacturing Co.

heater. Process piping in the old building was revamped. Steam formerly used entirely at high pressure in the Print Works processing has been changed to a satisfactory low-pressure operation, except in a few cases where high pressure is required. The returns from the heating and process piping systems in both new and old buildings will be carried back to the new boiler house at White Oak. Modern lighting systems were installed in both old and new buildings.

Revamping work on the old buildings consisted of such changes as were necessary to coordinate operations. Two old warehouses north of the dyehouse were reconditioned and made into manufacturing space by tearing out certain walls, constructing new floors and skylights, and installing new steel sash. In the production reorganization, all dyeing and finishing was moved to the first floor of the new building and these departments enlarged. The printing departments will remain in the old building. The basement areas in the new building will be used for chemical storage in one end and finished goods storage in the other.

A new six-story reinforced-concrete warehouse for cotton storage was also completed in 1926 for the Proximity Mill. It is 122x122 ft., and has a capacity of from 15,000 to 25,000 bales. The construction is concrete frame and brick curtain walls, flat slab floors, and mushroom columns. An elevator shaft connects all floors.

Plans have been completed and the contract awarded for the erection of a new two-story weaving building near the office at Proximity. Five compartments of one-story warehouse buildings will be demolished to make space for the new building, which will be 267 ft. long and 144 ft. wide. The construction will be reinforced concrete with mushroom columns and flat slab floor on first and second stories. The roof will be beam and slab construction with four cross monitors. Cast-iron columns will be used on the second floor. Concrete pilasters and curtain walls and steel sash will constitute exterior wall construction. A covered passageway will connect the old weave shed with the new building. Purchase has been made of 500 new Draper looms, which will be installed on the second floor, and for the time being the first floor will be used for storage. Yarns for the new looms will be obtained from night operation of the Proximity Spinning Mills.



One-Story and Part-Basement Addition to Proximity Print Works; 75,000 Sq. Ft. Floor Space; Used for Dyeing and Finishing Operations

Revolution Cotton Mill

While the Revolution Cotton Mill at Greensboro is not a part of the denim-producing group, it is operated under the same management, and the improvements there can rightfully be placed under this revamping program. During 1927, an extension to the bleachery and dyehouse has been completed and placed in operation. The new addition is one- and two-story reinforced concrete construction with flat slab floors and roof, and concrete beams and columns. The two-story part is 103x55 ft., and the one story is 38x55 ft. of the same ceiling height as the combined two-story section. This is used as a kier room, the kiers resting on the first floor instead of being imbedded below the floor, allowing access around the pumps. For the operating floor around the top of the kiers, steel gratings are used. In the two-story department the second floor is used for drying and the first floor is used for dyeing and steeping. The old part of the dyehouse where these operations were formerly carried on is now used for bleaching, washing, and mangling.

All of the developments carried on at these plants were planned and supervised by J. E. Sirrine & Co., engineers.

Connecticut Mills Complete Plant

New Southern Unit Begins Manufacture of Tire Fabric

IN 1926, the Connecticut Mills Company, of Danielson, Connecticut, decided to establish a southern plant for the production of fabrics for the tire trade. After studying a great many southern communities, negotiations were entered into with the business men of Decatur, Alabama, which resulted in this community organizing a local company known as The Textile Realty Company, Inc., which was to purchase land, erect buildings, and equip them ready to receive the machinery of the Connecticut Mills Company. This plant was then leased to the latter company with provision in the lease whereby the Connecticut Mills Company would purchase the plant from The Textile Realty Company at the expiration of the lease.

A 60-acre tract of land on the east edge of the city of Decatur was purchased, which would not only accommodate the first unit of 32,000 spindles but would also provide room for the building of additional units, thus providing for future expansion.

This site, being situated almost within the city, makes it possible for the housing situation being taken care of by the local community, thus making it unnecessary for the mills to build and operate a mill village. It has been found necessary as was originally contemplated to augment the available houses with some houses of the mill village type, but these are being erected by local people without cost to the mills.

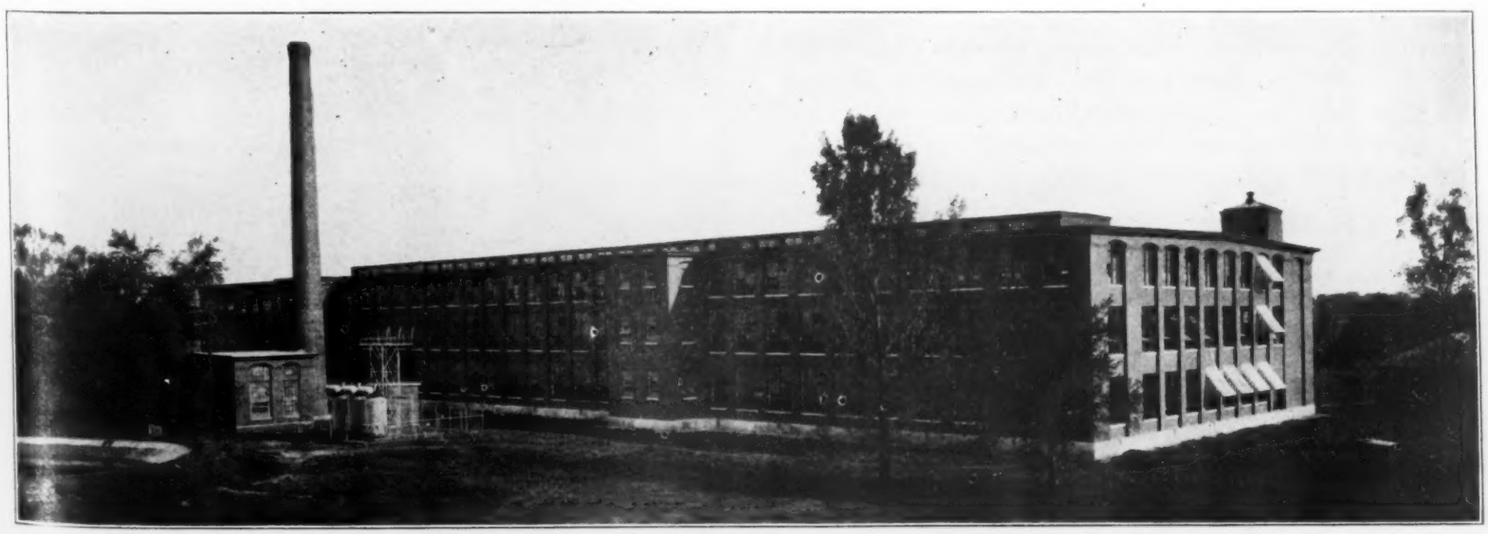
The buildings of the first unit, just completed, consist of a 3-story mill, 460x140 ft., and a separate picker building 72x70 ft., of the same height; each is of the slow-burning type of mill construction. The floors rest on steel beams supported by Lally columns, and are plank with pine intermediate flooring and a maple top floor to give the necessary hard, smooth surface for wear and trucking. The roof is covered with tar and slag.

Good Railroad Facilities

The mill is served by storehouses located on a spur track from the Louisville and Nashville Railroad, which provides ample space for the storage of both the raw material and the finished product. The opening and waste machinery is also located in one section of the storehouses, which consist of ten sections, 50x100 ft., one-story high.

The plant is protected against fire by a complete system of automatic sprinklers served by an underground piping system, with hydrants connected to the City of Decatur water system. This is also supplemented by means of a 500,000 gallon reservoir and an Underwriters' fire pump of 1,500 gallons per minute capacity, so that, should the city supply fail at any time, protection would still be available through this reservoir and fire pump.

Work of construction was started January 4, 1927, by A. K. Adams &



New Plant of Connecticut Mills Co. at Decatur, Ala.

Added protection paid for by insurance savings

A GOOD sprinkler installation connected to a Horton elevated tank increases your margin of safety against a disastrous fire. Failure of pumps or city pressure at a critical time cannot jeopardize your plant. The water necessary to cope with a blaze is always in storage ***above*** the buildings. It needs only gravity to bring it down. Gravity never fails.

Such an installation not only increases your protection. It actually saves its cost through a reduction in insurance rates. Many plants have found that by charging the same amount of insurance on their books they can pay for a tank and sprinklers in a few years out of this fund alone. The added protection is therefore free.

The same tank that protects your property from fire can also be piped to supply process water if desired or a separate elevated or flat-bottom storage tank can be provided. Our nearest office will gladly furnish data for estimating on any tanks needed for your plant.

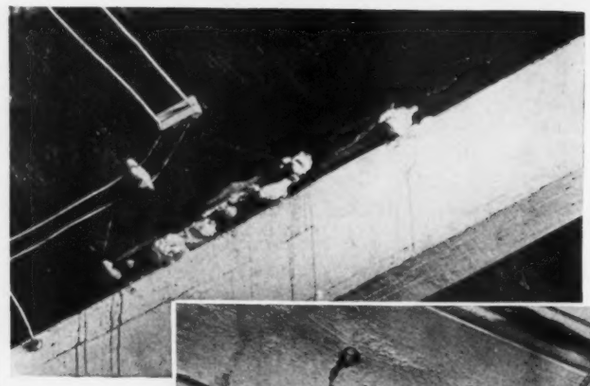
CHICAGO BRIDGE & IRON WORKS

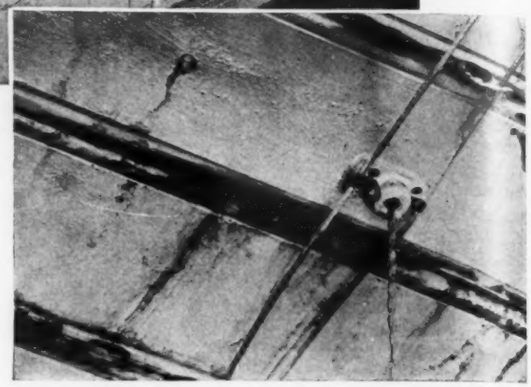
CHICAGO, 2112 Old Colony Bldg.
NEW YORK, 3125 Hudson Terminal Bldg.
CLEVELAND, 2203 Union Trust Bldg.
DALLAS, 1628 Dallas National Bank Bldg.
ATLANTA, 1075 Healey Bldg.
SAN FRANCISCO, 1080 Rialto Bldg.

HORTON TANKS

See also CONSOLIDATED TEXTILE CATALOG

TW 2-4—Gray





Two forms of destructive fungii

Are destructive fungii rotting your roofs?

ARE the roof timbers of your weave shed or dye house holding up against the fungii that the high humidities stimulate? Are the timbers resisting decay? Or are they in need of replacement — like the ones pictured above?

Prevent this disintegration of the wood . . . by laying timbers that have been treated with HEXSOTE, the modern wood preservative. Whether for new or "old" roofs, lumber — thoroughly creosoted — is bound to add years to the roof's service. HEXSOTE retards the destructive fungii from attacking the wood . . . prolongs the average life of the planks from 8 to 20 years.

There's no waiting for the creosoted lumber to be shipped. You can apply the HEXSOTE in your own yard . . . in an open tank that's easily set up. . . . Write for our 20-page booklet. It explains the simple operation required to handle mill lumber, fence posts, ties and timber.

Applying the HEXSOTE

TAR PRODUCTS CORPORATION

New England Division
American Tar Products Co.
Pittsburgh, Pa.

Refiners & Manufacturers
PROVIDENCE, R. I.

HEXSOTE

Trade Mark Reg. U. S. Pat. Off.

Company, of Atlanta, Georgia, general contractors. In spite of serious weather handicaps, all buildings were completed, ready to receive machinery, in five months and fifteen days.

Installation of sprinkler equipment, furnished by the Holyoke Valve & Hydrant Company, and the light and power wiring, by the Mill and Mine Construction Company, followed immediately building construction and were finished practically as soon as the building.

A special feature in connection with the design of the mill building is the automatic control of temperature and humidity at all seasons of the year. Humidifiers were installed by the Parks-Cramer Company, and heat regulation is controlled by equipment of the Johnson Service Company.

An office building, 30x60 ft., one-story high, with an attractive driveway from Sherman Street, provides pleasant quarters for the mill executives and clerks.

Complete designs of buildings and equipment were made by Chas. T. Main, Inc., of Boston, who also supervised the construction of the plant. All buildings were designed with special attention to light and ventilation, with the result that operatives find a very pleasing and congenial place in which to work.

Morrillton (Ark.) Cotton Mills

Plant Equipped for Manufacture of Heavy Ducks and Tire Fabric

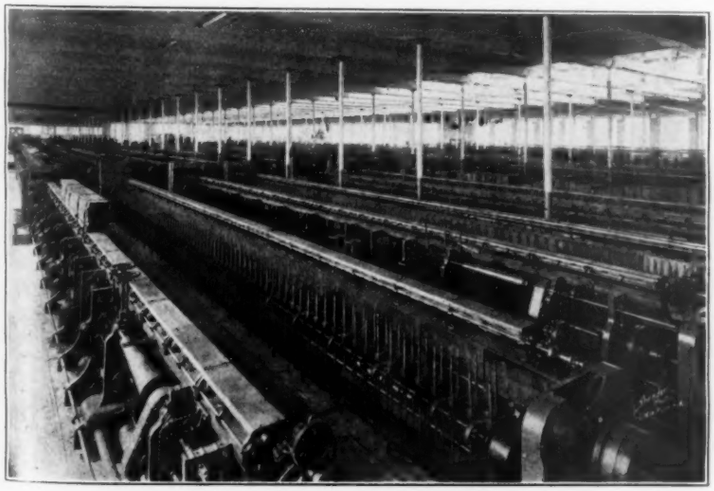
THE new Morrillton Cotton Mills, of Morrillton, Ark., formerly the Morris & Co., of Groveville, N. J., have just gone into operation, making automobile tire fabric and heavy duck for the belting and basket trade. This mill of 10,000 spindles is one of the first eastern mills to locate in Arkansas. The plant has operated for a number of years in Groveville, furnishing fabric for the automobile battery and tire trade. One of the deciding factors in selecting Arkansas for its location was the long staple that is grown in this state. Practically all of the tire fabric mills in the East purchase cotton at Little Rock, Fort Smith, and Pine Bluff, and Morrillton is located in the center of this area.

The site purchased by this company is located on the Fort Smith highway, about one mile from town, and is just outside the city limits. The mill did not build a village as there is a surplus of labor in Morrillton. The building program consists of a main mill building some 159 ft. wide by 414 ft. long. The cloth room, 62 by 54 ft., was built as an extension to the main mill, and in future will be absorbed by the mill extension. On the north end is the picker building which was built as a wing to the main mill. This wing is 52 x 90 ft., and adjoins the boiler house, which is 34 x 48 ft. The humidifier, toilet, and switchboard towers are located in the center of the mill on the railroad side. Shipping facilities are furnished by the Missouri Pacific Railroad.

All the buildings are of slow-burning mill type of construction, cast-iron columns and wooden beams being used on the interior and concrete walls on the exterior. The monitor is 50 ft. wide and spans the two center bays, extending the length of the mill. The mill has a tar concrete floor which is elevated some 18 in. above the outside grade. Steel sash was used throughout and the monitor is provided with a continuous mechanical sash operator.

The textile machinery is all located on one floor, which eliminates the necessity for an elevator and provides a continuity of processes throughout. Considerable new machinery was installed, including high-speed winders and warpers, and automatic looms, which bring the plant up to date. Practically all of the machines are individually electrically driven. A high-duty system of humidification has been installed by the American Moistening Co., which is synchronized with the Webster vacuum system of heating. The heating system was installed by Seeley Co., Atlanta, Ga.

The complete engineering work involved in connection with relocating this plant in Arkansas was handled by Robert & Co., architects and engineers of Atlanta, Ga. The fire protection system was installed by the Automatic Sprinkler Co. of America, and the boilers, tank, and towers by Schofield Sons Co., Macon, Ga. The Harrison Wright Co. of Charlotte, handled all of the power wiring, and the Monolith Builders of Little Rock, Ark., were the general contractors. E. T. Gurry is in charge of the mill at Morrilton for Morris & Co. Power is furnished by the Arkansas Power & Light Co., Little Rock, Ark. Morris & Co., Groveville, N. J., are sales agents.



Interior View, Morrillton Cotton Mills

Ware Valley Mfg. Company, Inc.

New Concern Takes Over Otis Company's Underwear Department

EARLY in 1927, there took place at Ware, Mass., a very interesting transaction which indicates what is being done with discontinued textile manufacturing facilities in some of the old mills of New England. Outside interests which have organized under the name of the Ware Valley Manufacturing Co., Inc., purchased from the Otis Co., one of their largest buildings, in which were located various operations, and also purchased the underwear business which was scattered through the plant in four different buildings on many floors.

All the machinery in the purchased building, except the knitting machinery on the fourth floor, was removed by the Otis Co. and installed elsewhere, and the new owners brought together into this one building all the various operations for making underwear, which as already stated were very much scattered. The building is divided into the following departments: winding and knitting, dyeing and bleaching, cutting, sewing, inspecting, pressing, packing and shipping.

The building secured by the Ware Valley Manufacturing Co., Inc., was of such size that these departments could be laid out to excellent advantage so as to give continuity of operations and to minimize the handling of goods in process. Probably the most notable room is the sewing room, located on the top floor, in which there are some 300 girls. The sewing tables are equipped with individual motor drives, and each sewing machine is provided with an individual swivel light, so there are no belts or unsightly wires to obstruct the view. There is a monitor over this room so that the natural lighting conditions are excellent. The working conditions in every way are the best, and it is undoubtedly one of the most modern sewing rooms to be found.

Sewing Room on Top Floor of Ware Valley Mfg. Company's Plant

As a part of the reorganization, a radical change was made in the method of bleaching, and piece dye machines were added, together with tubular dryers, so as to bring the equipment up to date. As a result this department is very compact and is operated on a most economical basis.

The present owners purchased with the building a water right of considerable value which supplies two water wheels. A generator was installed and belted to the water wheels, which supply the current for the motors throughout the plant. The new organization has been in control and operating for some nine months, and all the indications are that the project will be successful.

Chas. T. Main, Inc., Boston, were the engineers in charge of the development.

Interesting Structural and Plant of Chicopee

Efficient Layouts, Com Grade Design, Constr

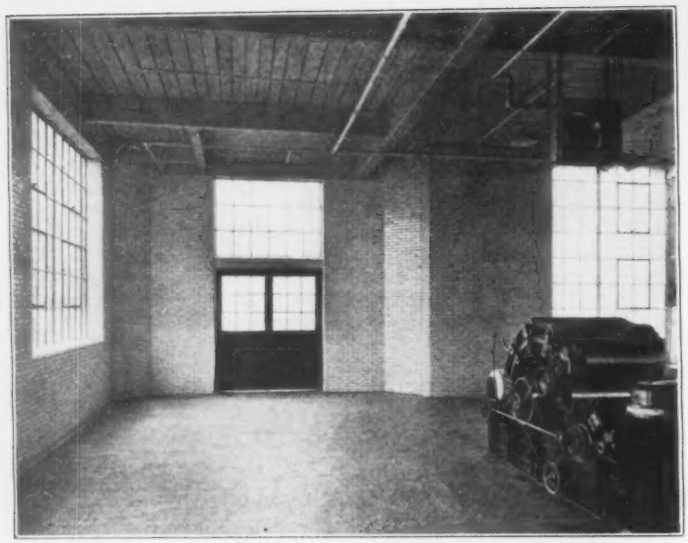


Fig. 1. White Enameled Brick Were Used for Interior Walls of the Main Manufacturing Unit of Chicopee Mfg. Corp. of Georgia, as Shown in This View of a Corner of the Carding Department

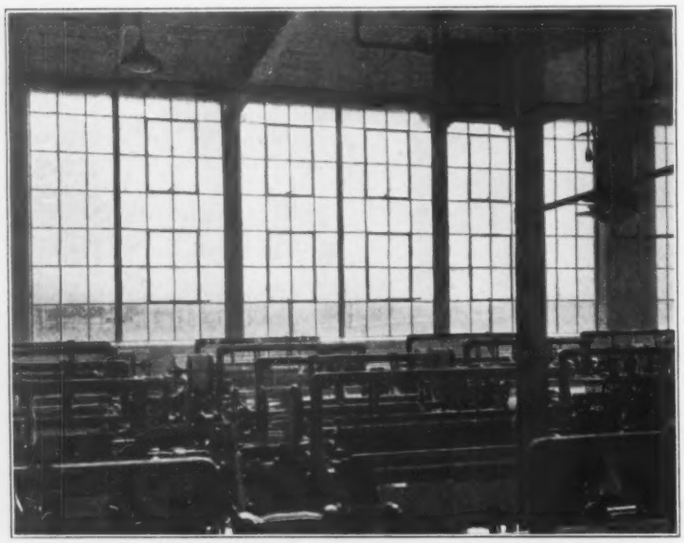


Fig. 2. Actinic Glass in the Sash, Except in the Lowest Row of Panes, Prevents Glare and Excludes a Large Percentage of the Heat Rays, as Well as Giving Better Light Diffusion

THE cotton mill built by the Chicopee Mfg. Corp. of Georgia, on a 3,400-acre site near Gainesville, Ga., stands out among the new textile mills completed in 1927 on account of special structural details embodied in the plant and the exceptionally good housing for employes provided in the model village. The plant and village of this new cotton mill were described in detail in editorial correspondence published in TEXTILE WORLD of Sept. 24, 1927. As the mill had not started production when the article was written, photographs illustrating unusual structural details and the plant's equipment were not available. The views presented herewith supplement the previous article, to which the reader is referred for detailed dscriptions.

White Enameled Brick Interior

The use of white enameled brick on the interior walls of the main manufacturing unit of the Chicopee plant has probably created more interest and comment than any other structural detail. Fig. 1 shows the white enameled brick walls in a corner of the carding department and is typical of all wall areas (except, of course, where occupied by steel sash) throughout the 228 by 934 foot main manufacturing unit. As the picture shows, the white enameled brick wall surfaces have unusually high light reflecting value The enameled walls can be washed clean when soiled and will never have to be painted. A baseboard, where walls and floors join, will help to protect the walls from damage from floor trucks, etc. The value of the enameled brick walls from the standpoint of sanitation hardly requires comment, as the baked enamel exposed surface is impervious to moisture. The sanitary consideration was probably the chief factor in the choice of this material for interior walls in the main building of the Chicopee plant.

Actinic Glass Prevents Glare

The window panes, set in Lupton steel sash, are of the new actinic glass, except the ones in the lowest row. Fig. 2 was made from a photograph taken against the sun. It will be noticed that instead of blurring, the photographic plate registered all of the details of the sash. The exclusion of glare and heat rays is one of the advantages of actinic glass, and Fig. 2 illustrates this feature as far as glare rays are concerned. The actinic glass in the sidewall sash of the Chicopee plant was furnished by Hires Turner Glass Co., Pittsburgh, Pa.

The splendid natural lighting of the mill interior, to which the white enameled walls, the special sash glass, and the ceiling painted with mill white all contribute their quotas, is shown in Fig. 3, a view of the carding department. The monitor on the roof, running the length of the main building, is provided with actinic glass set in Lupton steel sash, and provides an abundance of light in the center of the 228 foot wide structure. Fig. 3 also shows part of the eighty 40-inch cards built by Saco-Lowell Shops for the Chicopee plant.

Heating, Humidifying, Ventilating

Fig. 4 gives another view of the carding department and shows the Saco-Lowell drawing frames and, in the center and right background, some of the slubbers, intermediates, and rov-

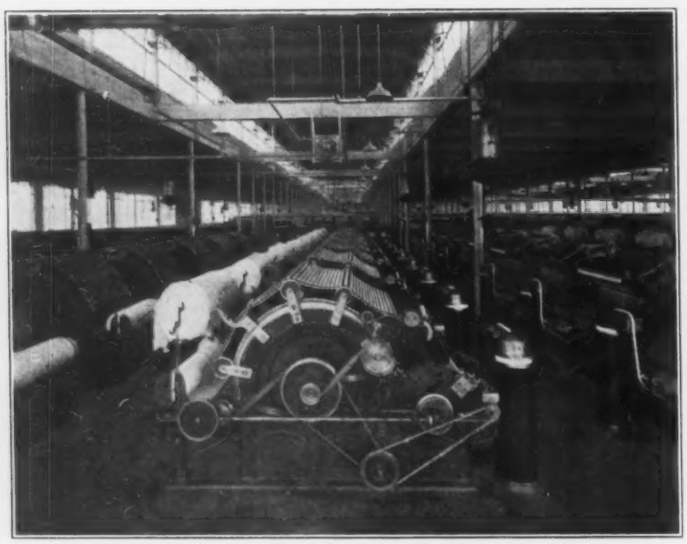


Fig. 3. The Lighting of the Main Manufacturing Unit, Which Is 228 Ft. Wide, Is Improved by a Monitor Which Runs the Full Length of the Roof

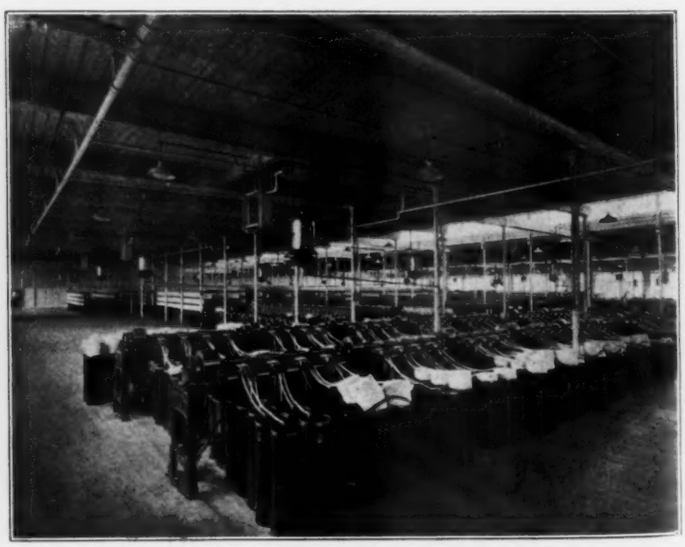


Fig. 4. Unit Heaters Suspended from the Ceiling Are Used in the Plant; the Units Are Controlled by Thermostats

Equipment Features at New Mfg. Corp. of Georgia

bined with the Highest uction, and Equipment

ing frames built by Woonsocket Machine & Press Co. A row of unit heaters suspended from the ceiling on wood cross beams is shown in Fig. 4. These heaters are of the venturafin type, made by American Blower Co., Detroit. Room temperatures are automatically controlled by regitherms, manufactured by the Fulton Sylphon Co., Knoxville, Tenn. The regitherms are suspended five feet above the floor and connected to the unit heater pipes. The automatic control of room temperatures will aid, of course, in maintaining the desired degree of humidity in the rooms where the thermostats are installed.

The spinning room in the Chicopee plant, of which Fig. 5 gives a partial view, is equipped with Fales & Jenks spinning frames. The humidifiers shown in Fig. 5 are of the duplex type built by American Moistening Co., Boston. The humidifiers are equipped with the new Amco controls, made by this company. These controls have animal membranes as hygroscopic elements and are mounted on the cast-iron columns which support the roof. The humidifying system was designed not only to maintain the desired degree of relative humidity but also to cool the rooms in summer.

The excellent natural light provided by the design, special window glass, etc., in the Chicopee plant has been referred to above. Fig. 6, a view of the weave room, shows the care with which the artificial lighting of the plant has been taken care of. The photograph, though made at night, brings out details from end to end of the weave room and shows remarkable evenness of light diffusion and intensity. The electric lighting fixtures are glasssteel reflectors manufactured by Benjamin Electric Mfg. Co., Chicago. Each reflector contains a 300 watt lamp.

Individual Motor Drives

The looms in Fig. 6 are Draper automatics. In the Chicopee weave room there are 750 40-inch and 250 42-inch looms.

All the cards, roving frames, drawing frames, spinning frames, and looms in the Chicopee plant are individually driven by General Electric motors. Fig. 7 illustrates a recent type of individual motor drive for cards used in this mill. The power lines are underground and have been carried to the motors in two main tunnels and six cross tunnels. Electric current for power and lighting is purchased from the Georgia Power Co., of Atlanta.

Steam for heating and for textile processes is generated by two 250 H.P. boilers, which were built by the Brunswick-Rochelle Co., Brunswick, N. J. The boilers are oil-fired, oil-burning equipment, having been supplied by Todd Dry Dock & Shipbuilding Co. Copes water feed regulators were installed, and a 100-foot radial brick stack was built by Alphons Custodus Construction Co. Fig 8 is an interior view of the boiler plant.

The plant of the Chicopee Mfg. Corp. of Georgia was designed by J. E. Sirrine & Co., engineers, of Greenville, S. C. Fiske-Carter Construction Co., of Greenville and Spartanburg, S. C., were the general contractors. Huntington & Guerry of Greenville, S. C., were the electrical contractors.

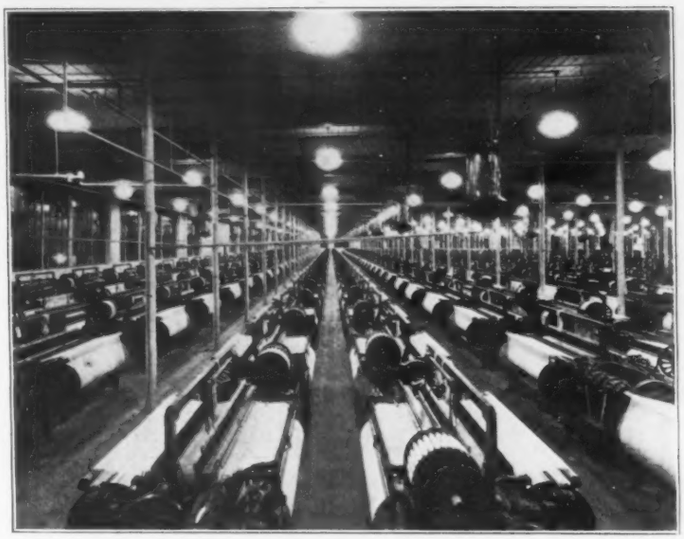


Fig. 6. Glassteel Reflectors Equipped with 300-Watt Lamps Provide Excellent Light as Shown by this Night View of the Chicopee Weave Room

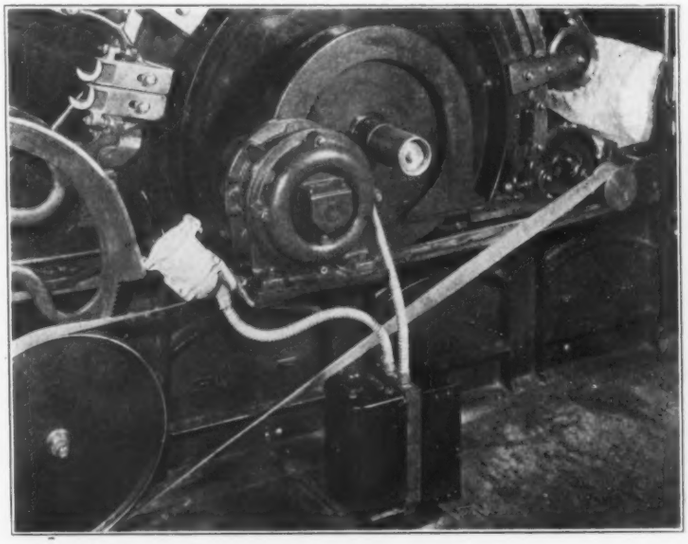


Fig. 7. Textile Equipment in the Chicopee Plant Is Driven by Individual Motors, this Late Type Individual Drive Being Used on All of the Cards

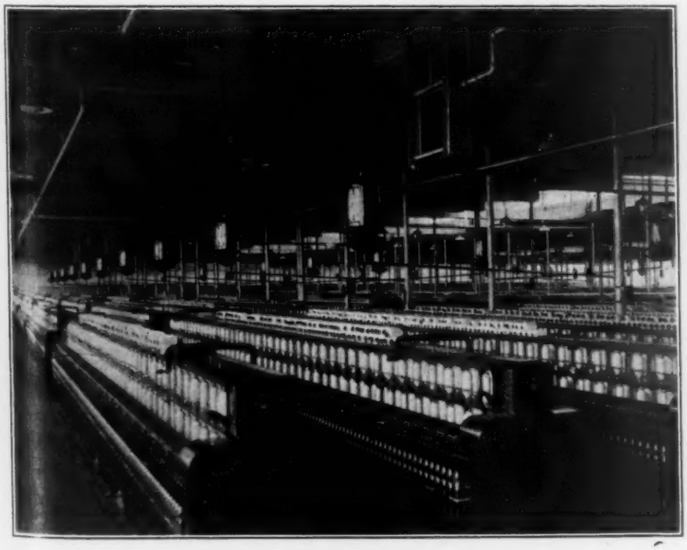


Fig. 5. The Humidifying System Was Designed not Only to Maintain Desired Degree of Relative Humidity, But Also to Make It Possible to Lower Room Temperature in Summer by Window Ventilation

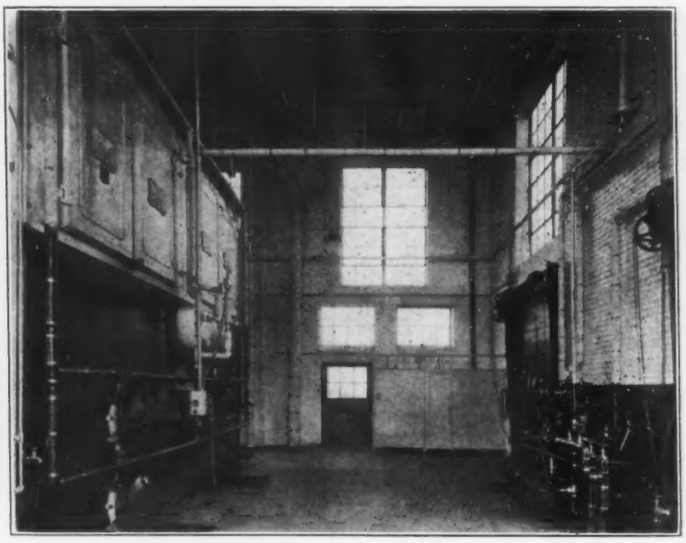


Fig. 8. The Two 250-h.p. Boilers Which Burn Oil, Will Furnish Steam for Heating and Processing in the Chicopee Plant

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Ordinary untreated lumber will not stand up under the ravages of DECAY. And decay is always present where plant operations require working under high humidities.

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Large Addition at Columbia Mills

Improve Facilities for Inspection of Finished Shade Cloth

THE Columbia Mills, Minetto, N. Y., manufacturers of window shades, in 1927 made a large addition of 36,000 sq. ft. to their cloth finishing plant at Minetto, N. Y. The enlargement really consists of three additions: one for inspection of goods; one for the housing of tenters; and the third for the receiving, storing, and handling of clay used in their special finishes.

Inspection of finished shade cloth has been housed in a wooden structure which did not offer proper facilities for this important operation. Accordingly, a new building was designed with sawtooth roof and maximum light area in walls, the sawteeth facing the North light. This building is a one-story steel-frame structure with tile walls and concrete floor.

At one end of the new inspection building a narrow ell extension was built, also one story, to house the tenters, and at the end of the tenter room a small two-story structure was built to receive and prepare the clay used in the finishing processes. This two-story structure was equipped with one large elevator as well as special machinery for clay handling. Doors to the elevator are of the Peele counter-balanced type. Fenestra sash was used in both walls and sawteeth.

Special Roof Construction

In the design of these structures, particular attention was given to the roof construction in order to prevent condensation. These roofs consist of precast concrete tile, manufactured by the American Cement Tile Co. of New York. Over this tile, two-ply roofing was laid, then one-inch cork board with a surface of four-ply roofing. This roofing was of the Johns-Manville built-up type carrying a 15-year guarantee.

The site of the new construction was partly occupied by a wooden structure which could not be removed until the new space was available to take the operations which it housed. The contract accordingly required the work to be carried out without interference with plant operation. It was therefore necessary to build the new construction completely around an existing building.

This work was designed by Lockwood, Greene & Co., engineers, and the construction was carried out by the Aberthaw Co. of Boston.

Winthrop Mills Co.

Large Warehouse Erected for Maine Blanket Mill

In May, 1927, work was started on a new warehouse for the Winthrop Mills Co., Winthrop, Me., manufacturers of wool blankets and yarns. This building is 64 ft. wide, 203 ft. long, and five stories high, with a fireproof stair tower at each end and a combined elevator and toilet tower at the center on the rear side. It is of mill construction, with steel beams, plank floors with maple-wearing surface, and Barrett specification roofing. Due to the rigorous climate in the part of Maine in which Winthrop is located, wooden frames and double-glazed wooden sash were used.

Due to the presence of old buildings, the use of which could not be given up until some of the new floor space was available, the southern half of the building was completed before the northern half was started. The first half of the building was turned over to the owners on August 15, and then the old buildings on the site were removed. The final portion of the building was completed early in December.

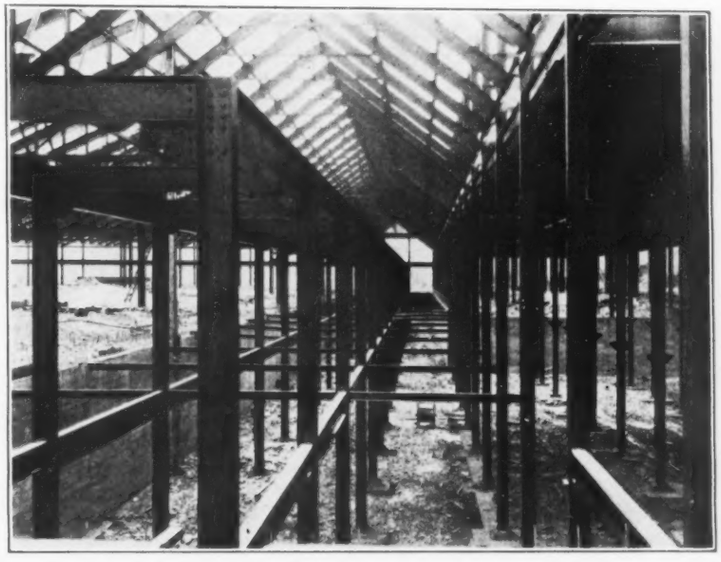
This work was done under the plans, specifications, and supervision of F. P. Sheldon & Son, engineers and architects, Providence, R. I. The general contractor for the construction work was O. D. Purington & Co., Providence, R. I. Equipment was supplied by the following concerns: Sprinklers by Files Engineering Co., Providence, R. I.; heating by Grinnell Co., Providence, R. I.; plumbing by J. E. Donovan, Winthrop, Me.; boilers by the International Engineering Works, Framingham, Mass.; and elevators by the Bay State Elevator Co., Springfield, Mass.

New Warehouse of Winthrop (Me.) Mills Co.

American Glanzstoff Corporation

Plant Under Construction at Elizabethton, Tenn., to Begin Production in Fall

DURING the early part of 1927, the American Glanzstoff Corp. was organized for the purpose of manufacturing in this country rayon yarns, similar to those produced in Germany and sold in this country. Investigations of various sites were carried on by the company's engineers over a period of several months, and many localities were investigated. Finally, selection was made of a site at Elizabethton, Tenn., adjoining the site of the American Bemberg Corp., which is one of the allied companies in the Glanzstoff group. Lockwood, Greene & Co., Inc., were engaged as engineers to carry out the design and supervise the construction of the plant, and actual operations were begun on the ground during August, 1927, with the starting of excavation. Since that time construction work has progressed rapidly. Steel frame work for all of the principal buildings was substantially in place during the first week of January, 1928.



American Glanzstoff Plant Will Have 550,000 Sq. Ft. of Floor Space

Large Power Plant

The new plant is to have a production of 15,000 lbs. per day, and it is expected that production will be started early in the fall of 1928. The new plant includes a number of buildings, all of steel frame construction and, in general, having reinforced concrete floor slabs. A large part of the plant will be of one-story sawtooth construction. There will be a large power plant, and extensions are already under way to the filter plant of the American Bemberg Corp., which will be enlarged to serve as a combined filter plant for supplying water to both the Bemberg and Glanzstoff plants. The total floor space of the new Glanzstoff plant will be approximately 550,000 sq. ft.

Among the principal contracts placed to date are the following: Excavation, B. G. Young, Johnson City, and the Dempster Construction Co., Knoxville, Tenn.; foundations, Hughes-Foulkrod Co.; structural steel, McClintic-Marshall Co.; chimney, Alphons Custodis Chimney Construction Co.; air conditioning, Carrier Engineering Corp.; turbines, Westinghouse Electric & Mfg. Co.; boilers, The Babcock & Wilcox Co.; stokers, Westinghouse Electric & Mfg. Co.; elevators, Westbrook Elevator

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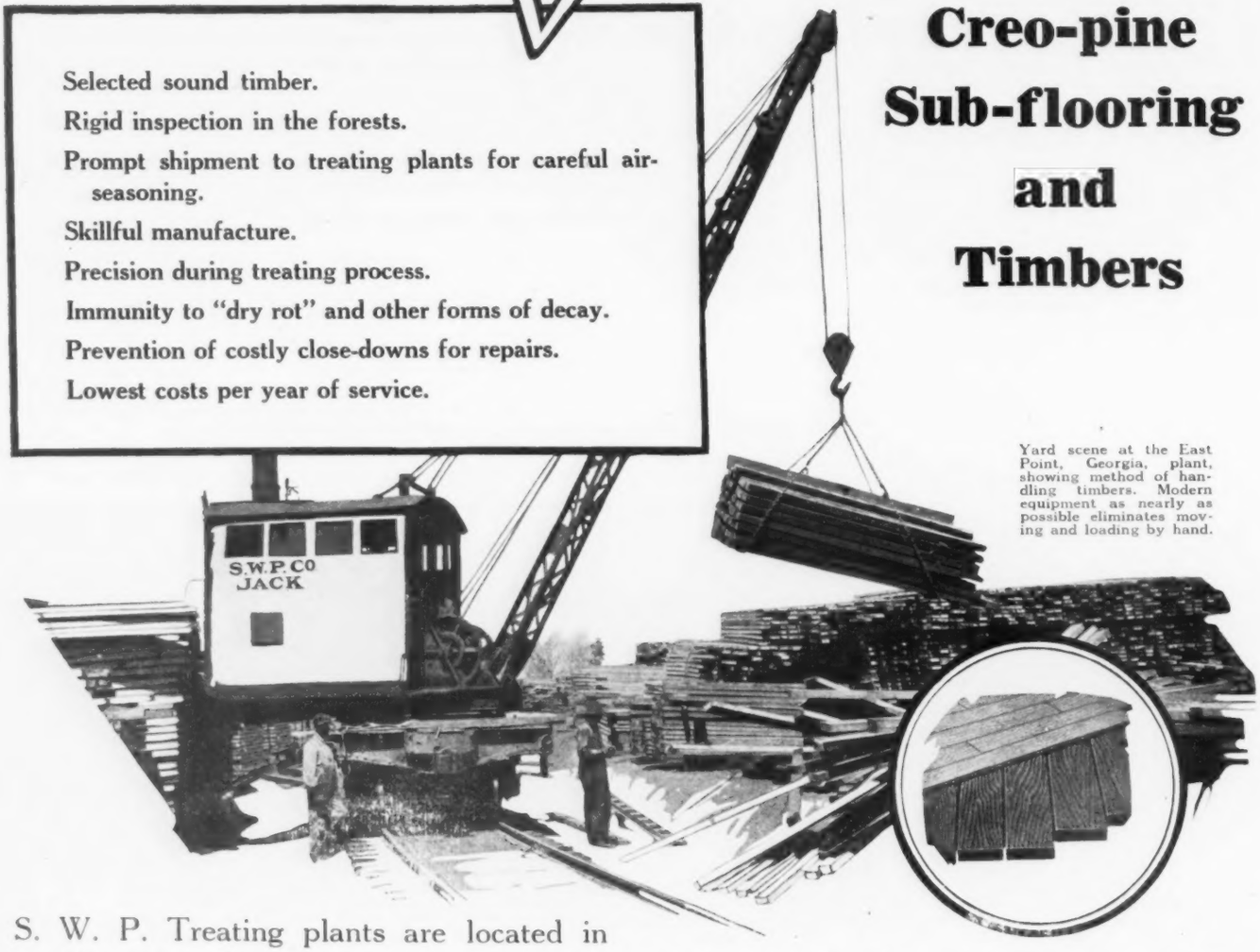

Yard scene at the East Point, Georgia, plant, showing method of handling timbers. Modern equipment as nearly as possible eliminates moving and loading by hand.

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Mfg. Co.; roof lumber, Long Leaf Yellow Pine Manufacturers Asso.; skylights and sheetmetal work, E. Van Noorden Co.; and sewers and drainage, Hughes-Foulkrod Co. Other contracts are being placed rapidly and construction work on the ground is proceeding very rapidly.

The New York office of Lockwood, Greene & Co., Inc., is preparing plans and specifications and placing contracts on the work under the direction of Oskar Oppenlander, representing the American Glanzstoff Corp. Construction work in the field is being supervised by Lockwood, Greene & Co., Inc., under the direction of W. G. Norteman, resident engineer.

Glanzstoff Organization

Believing that a short description of the organization of the concern would be of interest, the following particulars have been secured from B. C. Dunlop, of the Glanzstoff Corp.

The Vereinigte Glanzstoff Fabriken, A. G., of Elberfeld, Germany, one of the oldest manufacturers of synthetic yarns, was organized in 1899, from an industry originally engaged in manufacturing lamp filaments by the cuprammonium process. One of the first plants in which the original product, a cuprammonium yarn, was manufactured was that at Oberbruch, and is now the largest plant of the firm. Another plant, established about the same time was in Alsace, at Niedermorschweiler, near Muhlhouse. This was destroyed during the war. The general office of Vereinigte Glanzstoff Fabriken, which was first in Aix-la-Chapelle, was removed in 1901 to Elberfeld.

In 1904, the Vereinigte Glanzstoff Fabriken erected its first foreign plant in Austria, and during this year won the grand prize and gold medal at the St. Louis World's Fair for its superior product.

In 1893, two Englishmen, Cross and Bevan, discovered a new process to manufacture synthetic yarns under what is known as the viscose process by using wood pulp as a base. This process being more economical than the cuprammonium process was accepted about 1911, by the Vereinigte Glanzstoff Fabriken, instead of the cuprammonium process, to withstand competition. At the same time the viscose process was utilized by the Vereinigte Glanzstoff Fabriken, it took over the Sydowsaue plant near Stettin, Germany, which had already been in operation for several years. Shortly after this, control of the Kelsterbach plant was obtained.

The Bayerische Glanztoff, A. G., with plant in Obernburg, Bavaria, was organized in 1919, to replace the Alsatian plant, and in the same year a laboratory for research for the improvement of the process of the Glanzstoff interests was established near Berlin. In 1921, the Boehmische Glanzstoff Fabrik System Elberfeld, was organized in Czecho-Slovakia, at Lobositz, with the main office at Prague.

Plant Established in Japan

About five years ago, Glanzstoff together with Japanese interests, erected a plant in Zezcho, with main office in Osaka, Japan. Recently, Glanzfaeden, A. G., with a plant in Petersdorf, Germany, was taken over by Glanzstoff. This plant also manufactures under the viscose process.

Later on an important interest was taken over by the Vereinigte Glanzstoff Fabriken in the J. P. Bermberg, A. G., of Barmen, the largest producer of cuprammonium yarn by the stretch-spinning process. The Bemberg group through the American Bemberg Corp., recently constructed a plant in Johnson City, which is now in operation, and also developed plants in Gozzano, Italy, and in Rouen, France.

A short time ago the Vereinigte Glanzstoff Fabriken, A. G., entered into an arrangement with the I. G. Farbenindustries on an equal basis, to organize and develop the Aceta, G.m.b.H. for the manufacture of aceta yarn. This yarn has been recently introduced in European markets, and is soon to make its appearance in the United States. This yarn can be cross-dyed. Together with Courtauld's, Ltd., London, they have developed on an equal basis Glanzstoff-Courtauld's G.m.b.H., of Cologne. This firm is now constructing a large plant near Cologne.

American Bemberg Second Unit

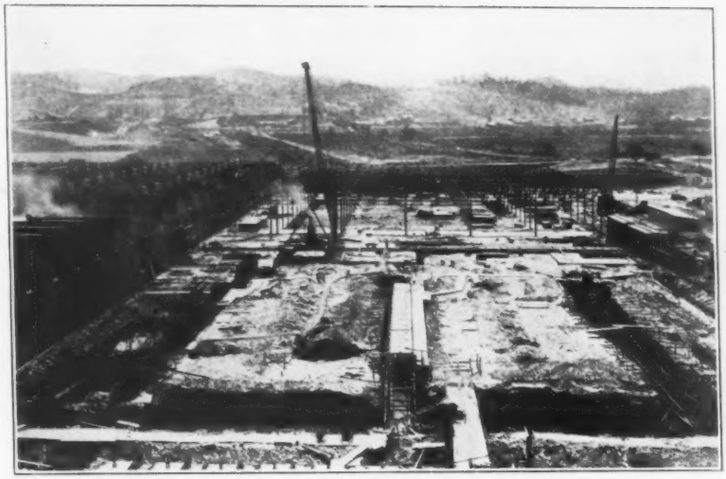
Will Increase Production to 14,000 Lbs. Per Day

ORIGINAL plans of the officials of the American Bemberg Corp., Johnson City, Tenn., provided for the construction of their plant in various units, which would be added as rapidly as the demand for their product justified increases in the output. Production in the first unit on a commercial scale was commenced early in 1927, and by the middle of the year it was decided that the construction of a second unit would be justified and plans were developed to go ahead immediately with this second unit. The capacity of the first unit is approximately 7,000 lbs. per day, and the second unit will be of the same capacity, giving a total for the two units of 14,000 lbs. per day.

Actual construction on the ground for the second unit was begun with excavating during August, 1927, and since that date various contracts have been let. Construction work is now proceeding rapidly with the erection of steel work about half completed, as will be seen by the accompanying photograph showing the work as it appeared on January 1.

The principal contracts placed to date include the following: Filter plant equipment, Roberts Filter Manufacturing Co.; fence, Cyclone Fence Co.; boilers, Springfield Boiler Co.; stokers, Westinghouse Electric & Mfg. Co.; structural steel, Virginia Bridge & Iron Co.; air conditioning, Carrier Engineering Corporation; filter plant construction, Hughes-Foulkrod Company; turbines, General Electric Company; general construction contract, The John W. Cowper Company of Buffalo and Atlanta; boiler settings, Geo. Allen & Son; pumps, Turbine Equipment Company; elevators, Westbrook Elevator Mfg. Company; monorail track, The Loudon Machinery Company; smoke flue, R. D. Cole Manufacturing Company; filter presses, D. R. Sperry & Co.; dryers, Proctor & Schwartz, Inc.; electrical work, Huntington and Guerry; and piping for heating, sprinklers, power house, filter plant, Grinnell Co.

The present plans are to have the new unit ready to begin production in August, 1928. Plans for the second unit have been prepared by the New York office of Lockwood, Greene & Co., Inc., and construction work is being supervised by them under the direction of W. G. Norteman, resident engineer.



Progress of Construction Work on Second Unit of American Bemberg Corp.

Dixie Mercerizing Co., Chattanooga

Addition to Spinning Department Increases Equipment to 40,000 Spindles

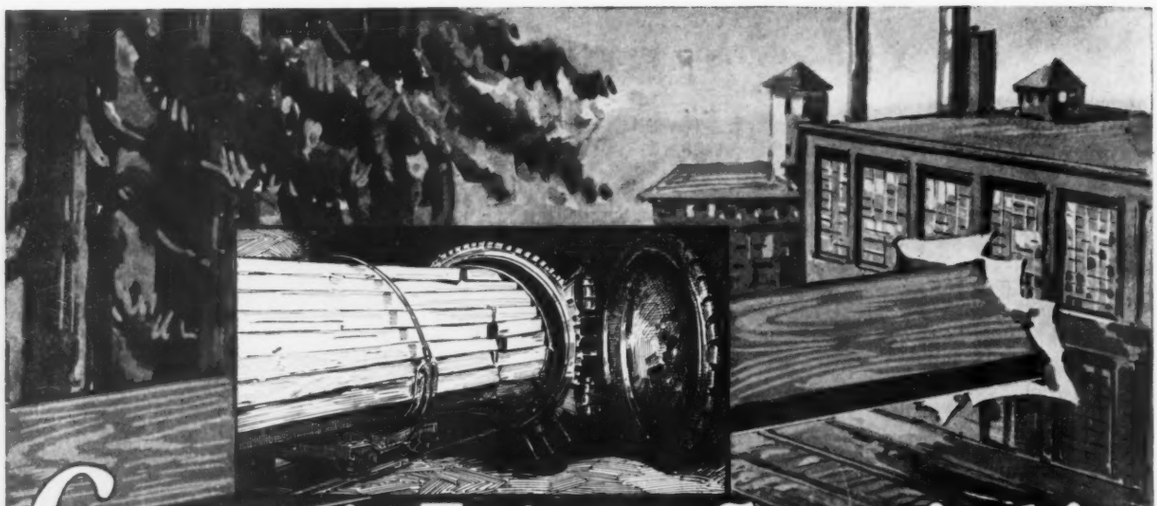
ONE of the large textile developments completed in Tennessee during the last year was the addition to the Dixie Mercerizing Company's spinning department. The spinning department of the Dixie Mercerizing Company is located at Lupton City, some eight miles north of Chattanooga, and with the completion of this new project the mill has some 40,000 spindles. Since the first unit of 13,000 spindles was built, the company has yearly authorized a building program, which has culminated in a completed 40,000 spindle unit for the manufacture of fine yarns.

Lupton City is an outstanding example of the better type of mill village in the South. The topography of the village is such that practically all of the streets have been laid out with wide curved base lines. The village has its own community center, which consists of schools, churches, motion picture auditorium and community stores. At the present time the mill employs some 500 people.

The building program just completed consists of a main mill building, one and two stories, 107x363 ft., together with 60 village cottages. The completed unit is some 990 ft. long, two stories, and faces Lupton Drive, the main boulevard in the village.

The main building has been designed to give a maximum amount of

Dixie Mercerizing Company's Spinning Department



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with GRASSELLI ZINC CHLORIDE —It Prevents Rot

IN the virgin forest a tree often lives hundreds of years. Cut down and shaped into structural timbers, and used in *untreated* form, its yearly life can be counted on the fingers of one's hands.

The function of a wood preservative is to prolong lumber life to a maximum, to add lastingness, serviceability.

GRASSELLI ZINC CHLORIDE, a standard preservative, will lengthen timber life three to six times. It impregnates durability and strength into lumber *because it prevents rot and decay*. It means less replacements, less repairs, therefore less impaired profit.

Grasselli Zinc Chloride is odorless and colorless. It is highly toxic and prevents growth of wood-destroying fungi. It is fire-retardant. Authoritative tests under exacting conditions with sticks of fir and pine (both very flammable woods) proved very definitely the fire-retarding qualities of GRASSELLI ZINC CHLORIDE. Zinc Chloride treated timber can be painted same as untreated timber—no paint value loss.

Zinc Chloride has been an accepted wood preservative for over 75 years and a standard for over 50 years. It has preserved billions of board feet of lumber.

Grasselli Zinc Chloride is inexpensive. It is a standard, recognized and endorsed by wood preserving authorities as well as U. S. Government Departments and textile mill architects.

Write us for more information. Our Service Department will be glad of the opportunity to cooperate and help you solve your wood preserving problems.

TREATING PLANTS IN SOUTH

The South has two fully equipped commercial pressure preserving plants for treating solely with Zinc Chloride according to standard methods, namely:—

The Piedmont Wood Preserving Co. of August, Ga.

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These plants are prepared for prompt and expeditious service and fully capable to take care of the great demand in the South for Zinc Chloride treated timbers.

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A Standard Preventative of Rot in Timbers for Floors, Sub-floors, Roofs, Supports, Dwellings, Highway Timbers, Mine Timbers and other miscellaneous timber uses.

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For Wood Preservation

light, and this is emphasized in the 17-ft. wide windows. Every other column in the main mill was omitted to provide an economical layout of machinery; steel beams being used throughout. The exterior of the mill shows a Gothic influence in design, the pilasters terminating in appropriate stone caps at the second-story line.

On account of the range of yarns spun, the picker room on the second floor divides the mill into two units, the card rooms being laid out north and south from this point. The roving drops to the first floor at each end of the mill, and returns through the spinning to the finishing room underneath the picker room. It is interesting to know that the Dixie Mercerizing Company was one of the first mills in the country to adopt an individual electrical drive on cards. With this drive the mill is one of the few installations in the South entirely individually electrically driven.

Robert & Co., Inc., architects and engineers, Atlanta, were the engineers in charge of the entire development. A. K. Adams and Company, Atlanta, were the general contractors.

First Unit of Slater Manufacturing Co's. New Plant Built at Marietta, S. C.

Equipment Includes 10,000 Spindles and 720 Looms to Make Rayon-Filled Alpaca Cloth—Modern Mill Village

THE new mill near Marietta, S. C., for the Slater Manufacturing Company is nearing completion and manufacturing will start in the early part of 1928. The territory in which the mill and village are located is near the Blue Ridge Mountains of South Carolina, and is connected with Greenville and transportation lines by the Greenville & Northern Railway and the Geer Highway. All mill buildings and most of the village houses were completed in January. Shipment of looms was started in December and completed in February. Other machinery for preparatory department and spinning has been purchased and shipment will begin in the near future. All present buildings are designed to allow for future extensions and are located with consideration to the establishment of future separate units.

Actinic Glass Used

The spinning building, which will house the first unit of 10,000 spindles, is two stories, 172x112 ft. The construction is brick pilasters and curtain walls with wide sash areas. The wood floors and roof planking are supported by cast-iron columns and steel and wood beams. The steel sash in the roof monitor and side walls has actinic glass. The spinning building is connected with the weave shed by a covered passageway 50 ft. long. This building is 375x138 ft. on the first floor and has a basement of approximately two-thirds of this area. The basement construction is brick pilasters, cast-iron columns, and steel beams, while the weave room is of daylight construction with wide transverse monitor in the roof. The steel sash in the side walls is continuous except for corner construction, toilet, and entrance towers. Actinic glass is used in all sash.

The roof timbers and planking in both buildings are kyanized for preservation. Both roofs and monitors are insulated with Celotex, ½ in. thickness being placed on the spinning building and 1 in. on the weave shed. Five-ply tar and gravel roofing was laid on all roofs. Ample toilet and entrance towers were provided for both buildings and elevators are also in outside towers.

Warehouse and Opener Room

Across the industrial sidetrack from the weave shed are the warehouse and opener room. The warehouse is two stories in height with two 50x100 ft. compartments on each floor. The opener room adjoining is one-story, 50x100 ft., with part basement for dust room. Large sash areas will provide excellent light. The transformer sub-station of the Southern Power Company, and boiler and pump house are located in the rear of the warehouse. The boiler room is 45x50 ft., with coal trestle on one side and a concrete water storage reservoir on the other.

Ample space has been provided in the opener room for ageing bins and machinery, which consists of the most modern opening and cleaning equipment. Cotton is carried by overhead pipe to the picker room of the spinning building, a distance of about 300 ft. The processes of picking, carding, combing, and roving are located on the second floor and spinning, spooling, and warping are located on the first floor. Warps are carried to the slasher room in the weave shed through the passageway connecting the buildings. Except for slashing, all of the weave room will contain looms.

Rayon Winding

The basement is divided into separate compartments which will house the departments of rayon winding cloth room, bleaching and dyeing, and machine shop. A small elevator placed near the center of the weave room will connect this floor with the dye room and machine shop in the basement. The first unit constructed will have 10,000 spindles and 720 looms. The product will be rayon-filled alpaca cloth. Cotton-warp yarns will be combed.

Power will be purchased from the Southern Power Co. New transmission lines are now being built from Greenville to serve this territory. Power will be stepped down at the sub-stations and delivered to the switchboard in a specially constructed centrally located building, at 550 volts, 3 phase, 60 cycles. Distribution will be made from here to all departments. Individual motor drives will be used on all machinery except parts of card room equipment.

Abundant Light Provided

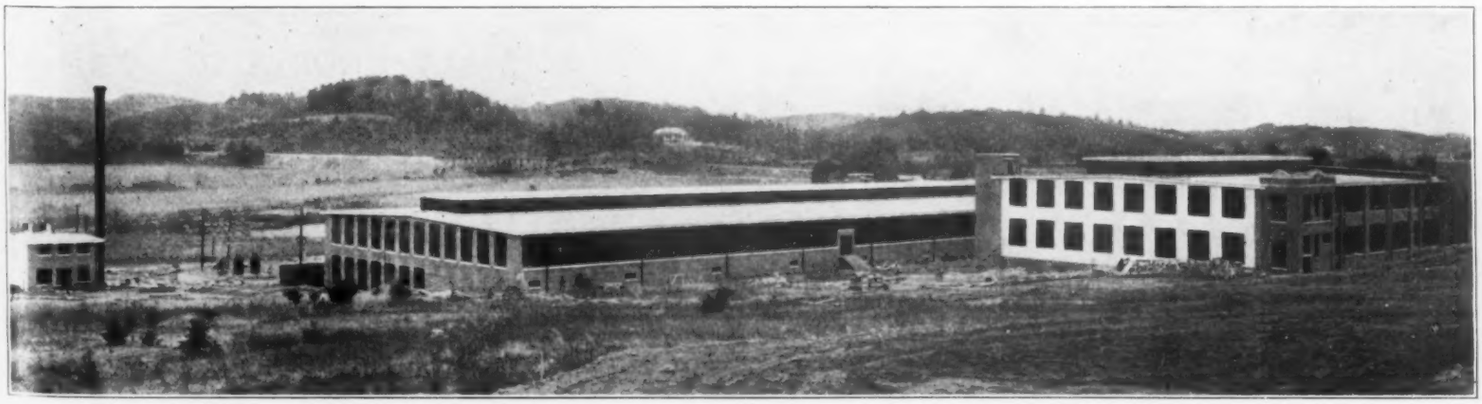
Light of excellent quality is required for proper working of the products which will be made. A lighting system of high intensity, yet free from glare, is obtained by the use of 300-watt glass steel diffuser type units. These are so spaced and mounted to give approximately 10-foot candles in the spinning building and 15-foot candles in the weave shed.

Steam will be supplied by two 150-horsepower h.r.t. boilers for dyehouse and heating purposes. Unit heaters will be used in the manufacturing building. Returns will be brought back to the heater in the boiler room by a vacuum system. All supply and return piping lines from and to the boiler house are carried on overhead supports.

Water for both fire protection and domestic use will be obtained from Greenville's new water supply with storage lake at Table Rock Cove. This storage reservoir, located in the mountains, is supplied by several streams. The gravity lines from the reservoir to Greenville, a distance of 32 miles, pass near Marietta, where the mill supply is obtained. The static pressure at the mill will be about 125 lbs., which is ample for main fire protection and village service. The storage reservoir of 270,000 gals. capacity near the boiler house, and a 1,000 gal. per minute fire pump, furnish the auxiliary supply. The water is of such quality that no treatment is required for manufacturing and domestic use.

Mill Village

The mill village, located in a beautiful rolling section of the property,



Combed Cotton-Warp Rayon-Filling Cloth Will Be Manufactured in This New Mill of the Slater Manufacturing Co.

COLE

TANKS TOWERS

COLE SPRINKLER TANK
100,000-gallon capacity, 100-foot tower

Tanks *and* Towers

Boilers ⌇ *Stacks*
Elevated Tanks
Standpipes
Kiers ⌇ *Dye Vats*
Steel Plate Work

See also CONSOLIDATED TEXTILE CATALOG

R. D. Cole Manufacturing Co.
NEWNAN, GA.
Established 1854

Increasing Plant Efficiency

with

Silver-Seal

MODERN industry knows the importance of daylight working conditions for factory employees—the lowered cost of production that results.

Because of the silvery sheen it imparts to all surfaces, its high reflectivity of light with a lessening of eye strain, "Silver Seal" is the ideal interior coating for plants, machinery, etc. It can be easily washed. It stains less from dust, soot or water than light-colored paints, and will not darken in atmospheres charged with sulphur-containing gases. Its use in storerooms, warehouses, vaults, passageways, all danger points, etc., is economically desirable.

"Silver Seal" has large covering capacity—on smooth surfaces from 500 to 700 square feet per gallon.

Government tests show that wood coated with asphalt and then aluminum is the most impervious to moisture—98% "Silver Seal" combines the two for one coat work.

The great durability and low first cost of "Silver Seal" makes it the logical rust proofing paint for all types of steel equipment.
Use "Silver Seal" to designate hot, or cold pipe lines.

"Silver Seal" gives double protection with its asphalt base and its coat of mail of *pure* aluminum.

There is no danger of lead poisoning when you use "Silver Seal."

A working sample of "Silver Seal" with full instructions for using sent to textile plants without charge or obligation. Write, or mail coupon below.

THE ASPHALT PRODUCTS CO., INC.
701 Free St., Syracuse, N. Y.

——————MAIL THE COUPON——————

THE ASPHALT PRODUCTS CO., Inc.
701 Free Street,
Syracuse, N. Y.

Please send me a working sample of "Silver Seal" with directions for use. It is understood that this places me under no obligations.

Name.....

Address.....

will have graded streets, paved sidewalks, and parks. The present building program provides for nine houses for officers, 99 houses for employes, an inn, church, store, and a school building. The houses will be equipped with modern conveniences such as lights, water, and sewerage.

The officers of the new organization are H. Nelson Slater, president; John Foster Dulles, vice president; Geo. A. Hilton, secretary and treasurer; Wyllys Taylor, general manager. J. E. Sirrine & Co., Greenville, S. C., are the engineers for the complete development.

Stevens Linen Works

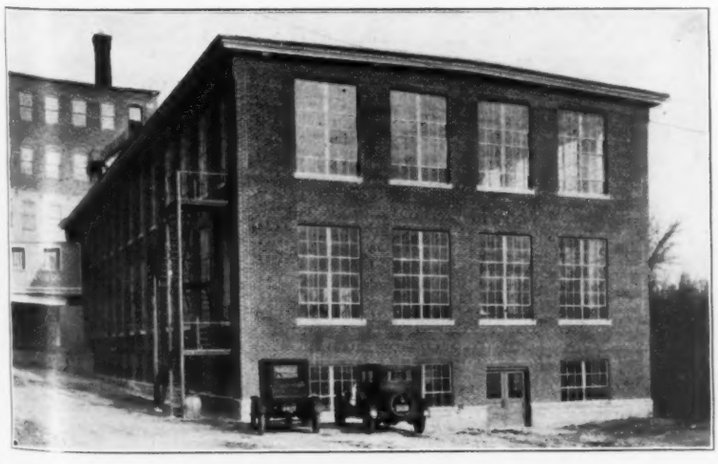
New Building for Finishing and Weaving

The Stevens Linen Works, of Webster, Mass., are just completing a new building, 154 ft. by 55 ft., two stories and basement, which will be used for finishing and weaving. This building is connected to the existing buildings by two bridges, one on each floor, and is so located that it fits into the present organization and the processes of handling goods.

The building is of mill construction, with steel floor beams, heavy plank floors, and galvanized steel sash. The floor heights and window areas are such that the natural lighting conditions are unusually good. The building is equipped with heating coils, automatic sprinklers, and a modern system of lighting. The first floor will be used for finishing and packing and the second story will be filled with motor-driven automatic looms.

At the same time that this work was going on, a new elevator tower was built to serve the existing five-story buildings. A 4,000-lb. traction type Otis elevator was installed and the shaft openings are equipped with Peelle doors.

A partial reorganization of the weaving department was made, which has very much improved the conditions under which the looms will be operated. The changes which were made in the finishing department relieved a serious congestion at that point. These improvements were carried out under the supervision of Chas. T. Main, Inc., engineers, Boston.



New Finishing Building of Stevens Linen Works

Colonial Knitting Mills

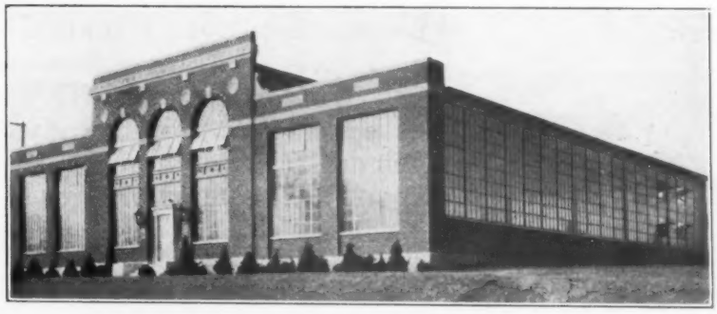
Erect First Unit of Full-Fashioned Hosiery Mill at Mohnton, Pa.

A NEW plant built by an old company is the new full fashioned mill recently erected by the Colonial Knitting Mills, of Philadelphia, at Mohnton, Pa. The plant consists of an Austin Standard No. 3 building and is about 100 by 100 ft., consisting of two 50 ft. aisles. The column spacing has worked out very well for the owners' installation of machines, which are of the type manufactured by the Wildman Mfg. Co., of Norristown, Penna.

The building has steel frame of the monitor type, slow-burning wood roof and continuous sidewall sash on both sides, with concrete floor, brick curtain walls and five-ply built-up roofing.

The boiler room and toilet rooms are located in an adjacent ell, leaving the entire floor space unobstructed.

This is the first unit of a building designed for a final length of 300 ft. Boiler room, toilets and sewerage are designed for this ultimate capacity. The plant is quite complete with all modern conveniences and safety devices, is completely sprinklered and has its own sewage disposal plant. The building was designed, erected and equipped by the Philadelphia office of The Austin Company, industrial engineers and builders, of Cleveland, Ohio.



First Unit of New Full-Fashioned Hosiery Mill at Mohnton, Pa.

Mill Construction Report

(*Continued from page 367*)

side mill to house machinery from Arista mill; Slater Mfg. Co., Marietta, S. C., new mill to house 10,000 spindles and 700 looms; also additions to the Greenwood (S. C.) Cotton Mills, the Inman (S. C.) Mills and the Mollohon Mfg. Co., Newberry, S. C. In Canada the Dominion Textile Co., made extensive additions to its plant at Magog, Quebec.

New Wool Mills

As might have been expected new wool goods mills were few in number during 1927 and chiefly for specialized production such as yarns, upholsteries, etc. Our records credit Rhode Island with three of the total of 10 new enterprises, Massachusetts and Pennsylvania with two each and Georgia, West Virginia and Canada with one each. Under enlargements and improvements, Massachusetts takes the lead with 17 out of 63, Pennsylvania is next with 10, then Rhode Island with nine.

Among the more important of the construction items in the wool industry during the year are the following: Limerick (Me.) Mills, addition to house 6,000 spindles; Collins & Aikman Co., Philadelphia, addition to Manayunk plant; Penn Worsted Co., Philadelphia, new manufacturing building; James Lees & Sons Co., Bridgeport, Pa., five story addition; Oregon Worsted Co., Portland, Ore., addition; Atlantic Mills, Providence, R. I., addition costing $100,000.

New Knitting Mills

Out of a total of 70 new knitting projects, North Carolina and Pennsylvania divide honors with 23 each, or together about two-thirds of the total. The next nearest State is New Jersey with only five. A large proportion of these new knitting mills are full fashioned plants. Out of a total of 132 enlargements and improvements, Pennsylvania is easily the leader with a credit of 46. Next in line is North Carolina with 17, then Canada with 13, New York with 10 and Wisconsin with nine.

Outstanding among the knitting mill propositions reported during the year are the following: Gardiner & Warring Co., Florence, Ala., new mill to house machinery from Amsterdam, N. Y.; Unique Knitting Co., Acworth, Ga., mill to house machinery from Philadelphia; Harris Silk Hosiery Co., Springfield, Mass., new full fashioned mill; Carolina Silk Products Corp., Greensboro, N. C., finish new full fashioned mill started previous year; Greensboro (N. C.) Full Fashioned Hosiery Mill, new mill; Phoenix Mills, Statesville, N. C., new mill to house machinery from Little Falls, N. Y.; Concordia Silk Hosiery Co., Frankford, Pa., extension to plant; Society Maid Hosiery Mills, Willow Grove, Pa., new full fashioned hosiery plant; Debonair Hosiery Co., Cleveland, Tenn., extension to plant; High Rock Knitting Co., Bristol, Va., new underwear mill as branch of Philmont, N. Y., plant; Dobson-Miller Corp., Pulaski, Va., new mill building; Allen A. Co., Kenosha, Wis., addition to plant; Eagle Knitting Mills, Milwaukee, Wis., new mill; Eaton Knitting Co., Hamilton, Ont., new finishing plant.

New Silk Mills

The 19 new silk mills reported for 1927 marks a sharp decline from the 37 reported a year ago for 1926. Of the present total Pennsylvania is credited with seven, New Jersey with six, North Carolina with five, and Massachusetts with one. Reports of enlargements and improvements in this field number 37, with 14 in Pennsylvania, six in New Jersey, three in Connecticut and the remainder scattered.

Several of the outstanding examples of silk mill construction during the year are as follows: American Velvet Co., Stonington, Conn., new weave shed; Seaboard Silk Mills, Elberton, Ga., new mill with 216 looms, a subsidiary of the Susquehanna Silk Co.: Schwarzenbach, Huber Co., Union City, N. J., four story extension; Carolina Silk Mills, Burlington, N. C., new 100 loom mill; Laros Silk Co., Bethlehem, Pa., three story addition; Stunzi Sons Silk Co., Ephrata, Pa., addition to plant; Buena Vista (Va.) Textile Corp., new mill building; Albemarle Weaving Co., Charlottesville, Va., new mill.

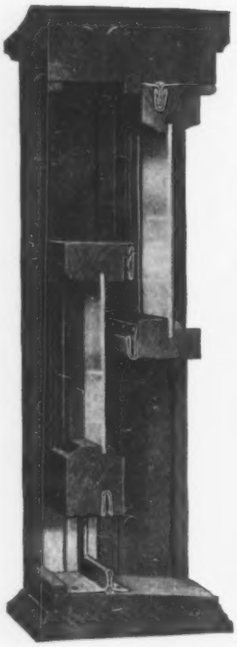
New Rayon Plants

Five new rayon plants were reported during the year, three in New Jersey, one in North Carolina and one in Tennessee. The recorded enlargements and improvements number eight, with two in Tennessee and one each in Delaware, Maryland, New Jersey, Ohio, West Virginia and Canada.

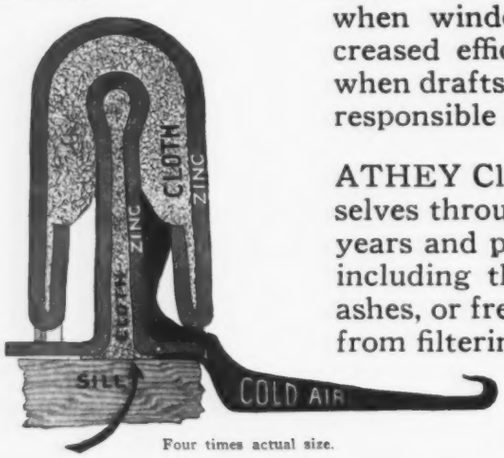
The outstanding individual additions to the industry include the following: the Delaware Rayon Co., New Castle, Del.; Celanese Corp. of America, Amcelle, Md., extensive additions; American Bemberg Co., Bemberg, Tenn., erect second unit to plant; American Glanzstoff Corp., Elizabethton, Tenn., erect first unit to plant;

The best investment

a textile factory can make



ATHEY Cloth-to-Metal contact weatherstrips change any wood or steel window from a rattling, loose, drafty sash to one that works smoothly and quietly and is absolutely draft-proof when closed.



Four times actual size.

MODERN factories no longer consider comfort for employes a luxury. Nimble fingers are warm ones and humidity cannot be controlled when windows are drafty. But aside from increased efficiency and production of the workers when drafts are eliminated, *Atheyized* windows are responsible for an enormous saving in fuel.

ATHEY Cloth-Lined Weatherstrips pay for themselves through the saving of fuel in less than three years and pay large dividends for many more, not including the saving in the handling of coal and ashes, or freedom from dust and smoke that is kept from filtering into the factory.

It has been proved that it costs in excess of 20% more to heat a modern building in Chicago not equipped with Athey cloth lined weatherstrips.

ATHEY WINDOW SHADES

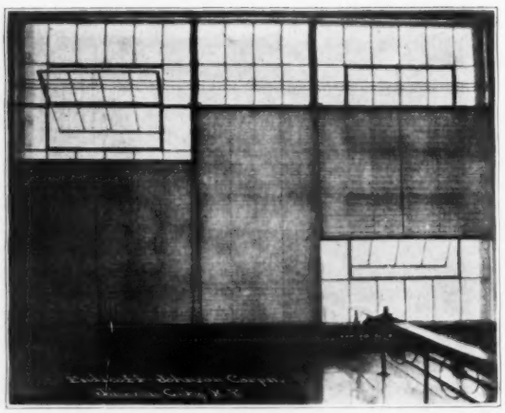
TEXTILE FACTORY PRODUCTION demands maximum of light without the dazzling direct rays of the sun. ATHEY SHADES fulfill every conceivable necessity for factories.

First—They are instantly adjustable to shade any part of the windows whether they be steel or wood, ordinary sash, casement windows, or of the tilting types, such as are shown in the illustration at the right.

Second—The edges are eyeletted and slide on taut guide wires which hold the shade from the window or from flapping to become soiled and torn.

Third—The material is a special weave of coutil which resists dust and dirt, is very strong and durable and is easily cleaned in case of necessity.

Fourth—There are no complicated springs or catches to stick, break or get out of order; no jerking to adjust or tacks to pull out.



An ATHEY Shade because of its ease of operation and adjustability, outlasts two pairs of ordinary shades.

Send for this new Catalog.

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CLOTH-LINED METAL WEATHERSTRIPS and PERENNIAL WINDOW SHADES

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6024 W. 65th St., CHICAGO, ILL.

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Cresswell-McIntosh, Reg'd 420 Seigneurs St., Montreal Quebec.

Factories, Schools, Hospitals, Hotels, Office Buildings all over America appreciate the economy of ATHEY Products.

Du Pont Rayon Co., Old Hickory, Tenn., erect third unit to plant. Several of the new concerns are just about getting details completed leading up to actual construction, while others are operating experimentally in temporary quarters.

Miscellaneous Mills

Of the 46 reported new mills in the miscellaneous classification 28 are dyeing, bleaching and finishing plants, six fiber mills, five mattress plants, four braid and odd fabric mills, and two linen and jute mills. In 1926 there were 24 new finishing plants reported. In the 69 miscellaneous enlargements and improvements reported, 51 concerned finishing plants. In new plants New Jersey leads with 12, followed by North Carolina with seven and Pennsylvania with five. Under enlargements, New Jersey also leads with 14, followed by Massachusetts with 10, Rhode Island with nine, Pennsylvania with eight, New York with seven and North Carolina with five.

Among the leading examples of expansion in this field are the following: Gossett Dyeing and Finishing Co., Anderson, S. C., new plant; Thies Dyeing and Processing Co. of North Carolina, Belmont, N. C., new plant; Stevens Linen Works, Webster, Mass., mill addition; The Dixie Mercerizing Co., Chattanooga, Tenn., two story addition to house singles mercerizing plant, also large addition to spinning department.

Following are the detailed reports of new mills, enlargements and improvements:

Detailed Report of New Mills

NEW COTTON MILLS

Arkansas. Little Rock. Little Rock Textile Co.; build new plant; 1-story, 50 x 200 ft.; equip with 1500 spindles, 2 rope machines, 50 braiders; operation begun in August; plant destroyed by fire in December.

Magnolia. Magnolia Cotton Mill Co.; erect new mill; main building, 1-story, 125 x 240 ft.; 5,000 spindles.

Connecticut, Bridgeport. Toulson Yarns, Inc.; organize with capital of $100,000; lease plant and equip for making novelty yarns.

South Manchester. Manchester Net Co.; organize with $50,000 capital; succeed to business of Seamless Net Co.; erect new mill, 1-story, 34 x 100 ft.; install 11 looms.

Georgia, Carrollton. Caroline Mills, Inc; erect new plant; 2-story, 75 x 220 ft.; 4,000 spindles.

Newnan. Arnco Mills; new plant equipped with 10,000 spindles and 160 looms on blankets; start addition 150 x 436 ft.

New Jersey, Camden. Blue & Gray Plush Co.; start manufacture of plushes in leased quarters; 2 looms.

North Bergen. Art Trimming & Label Corp.; start making narrow fabrics with 10 looms.

North Carolina, Chadbourn. Chadbourn Cotton Mills, Inc.; purchase building and install 6,000 spindles and 40 wide dobby looms.

Charlotte. Lambeth Rope Corp. (New Bedford, Mass.); establish branch plant in leased quarters; 20 looms.

Pinoca. Pinoca Mills, Inc.; erect 2-story mill having 30,000 sq. ft. floor space; install 60 64-in. looms for initial operations.

Pittsboro. Chatham Mills, Inc.; capital $100,000; operate 32 looms on woven labels. A. C. Kluge, president.

Rocky Mount. W. H. Draper & Sons Co.; organize with $100,000 capital; purchase plant formerly used by Rocky Mount Hosiery Co. and transfer machinery from Troy, N. Y. to Rocky Mount.

Pennsylvania, Easton. Penn. Plush Weavers; capital $30,000; Edwin Voolrath, president; operate 6 looms on cotton plush.

Philadelphia. Butterworth Co.; start manufacture of cloakings, velours, velvet and upholstery goods with 10 broad looms.

Philadelphia. Quaker Plush Mills, Inc.; install 10 72-in. looms in leased quarters and start production.

Philadelphia. Wavark Mills (Frankford); lease space and equip with 14 looms for making damask covers and specialties.

Philadelphia. Wilson Mfg. Co.; new concern, manufacturing jacquard plushes at 3rd and Huntingdon Sts.; Wm. T. Wilson interested.

Rhode Island, Woonsocket. Rhode Island Textile Fabrics, Inc.; new organization on cotton and silk mixed goods. H. W. Maertens, president, operate 350 looms.

South Carolina, Greenville. Southern Pyle Fabric Co.; capital $150,000; will install 24 looms in new mill building and operate as southern branch of Brooks Bros. Co., Inc., of Philadelphia.

Traveler's Rest. Renfrew Co. of the Woodward Baldwin Co.; erect new weave shed, 1-story 281 x 138 ft.; dyeing and finishing plant, 1-story 309 x 203 ft.; and warehouse 150 x 100 ft.; also 60 houses of 5 rooms each for operatives. Will house some machinery from Renfrew Mfg. Co., Adams, Mass., which was liquidated; proposition developed by A. W. Smith of Greenville and it is said entails expenditure of more than $500,000.

Slater. Slater Mfg. Co.; capital $1,000,000; H. N. Slater, president; erect new mill, main building 2-story, 112 x 173 ft., weave shed 2-story 127 x 375 ft. and warehouse 2-story, 100 x 150 ft.; to be equipped with 10,000 spindles and 700 looms on cotton and rayon specialties; much of the machinery was shipped from Slater Mills, Webster, Mass.; site is near Marietta, S. C.

Texas, Harlingen. The Valley Cotton Mills; erect 100 x 240 ft. mill and equip with 5000 spindles and 180 looms; J. R. Roberts, president.

NEW WOOL MILLS

Georgia, Newnan. National Dixie Mills (subsidiary of International Worsted Mills, Methuen, Mass.); start manufacturing in leased quarters, equipped with 50 wide looms, dyeing and finishing equipment.

Massachusetts, Auburn. Wood Wool Combing Co.; new wool combing company started in old building of Ettrick Mills; in charge of E. T. Wood.

Millbury. Millbury Woolen Co.; incorporate for $600,000; purchase former Cordis Mills; install 6 sets cards, 2,016 spindles and 60 looms.

Pennsylvania, Philadelphia. Jasper Mills Co.; start making woolens and worsteds in leased quarters; 24 broad looms.

Philadelphia. Zimmerman Mills, Inc.; incorporate for $100,000; lease 16,000 sq. ft. space and equip with 12 rug looms.

Rhode Island, Pascoag. Bowditch Mills, Inc.; purchased plant of Continental Worsted Mills and convert to wool and worsted waste and reworked wool plant; erection of addition contemplated.

Pascoag. Gaunt-Knibb Co.; acquire former Lincoln Mills and set up 20 looms on fancy worsteds; Rowland Gaunt is president.

Tarkiln. Columbia Fiber Corp.; starts manufacture of top coatings and cloakings made from special fiber, with 5 sets of cards and 40 broad looms.

West Virginia, Keyser. Hand Loomed Shetlands, Inc.; capital $10,000; C. B. Robbins, president; operate 30 looms.

Canada, Quebec, St. Johns. Demetre, Sault & Ciriez, Ltd.; install 60 looms on worsted dress goods; operate as branch of concern in France and Belgium; J. H. Panneton is Canadian managing director.

NEW KNITTING MILLS

Georgia, Barnesville. Georgia Knitting Mills; lease building and equip with 12 circular and 25 sewing machines.

Summerville. Montgomery Knitting Mills; capital $100,000; lease 2-story, 20 x 80 ft. building; install 12 circular knitting machines; E. W. Sturdivant is president; E. Montgomery, treasurer and manager.

Villa Rica. Villa Rica Mfg. Co.; start producing cotton half-hose; 50 knitting machines, 10 ribbers, 11 loopers, 1 sewing machine.

Kentucky, Murray. Paducah (Ky.) Hosiery Mills, Inc.; build branch plant at Murray; 1-story, 40 x 100 ft.

Maine, Bangor. Emple Knitting Mills; lease space and equip with 6 latch needle knitting and 6 sewing machines.

Massachusetts, Blackstone. East Blackstone Knitting Co.; build 1-story, 30 x 52 ft. plant; start up with 4 circular knitting machines and 2 winders.

Medford. Mystic Knitting Co.; start making sweaters in leased quarters; 4 knitting machines.

Springfield. Harris Silk Hosiery Co.; construct 1-story, 90 x 140 ft. mill; install 12 f. f. knitting machines.

Worcester. Circlette Mfg. Co.; start making circular knit elastic in leased quarters; 6 knitting machines, 3 sewing machines.

Missouri, Moberly. H-R-H Silk Hosiery Mill; construct 1-story, 36 x 100 ft. plant; equip with 20 circular knitting machines, 6 loopers, 2 sewing machines.

New Jersey, Hackettstown. Hackettstown Silk Hosiery Co.; start construction of 1-story, 50 x 70 ft. mill.

Hoboken. Wm. H. Brown, Inc.; incorporate for $125,000; move from Union City to larger quarters at Hoboken; 10 f. f. jacquard knitting machines, 6 loopers, 10 sewing machines, 1 winder.

Rockaway. Arthur W. Fox Hosiery Mills; erect 2-story mill, 55 x 100 ft.

Weehawken. Scot Lane Mills; start manufacturing with 3 circular jacquard machines, 8 knitting machines, 3 f. f. footers, 2 loopers, 5 sewing machines.

West New York. Princeton Knitting Mills (Brooklyn, N. Y.); lease building at West New York for branch plant; 50 knitting machines; 100 winding machines.

New York, Brooklyn. Keystone Hosiery Mills, Inc.; organize with $100,000 capital; begin making f. f. hosiery in leased quarters; 8 knitting machines.

New York. Raynor Hosiery Mills, Inc.; begin making golf and athletic hosiery with 17 l. n. knitting machines, 2 loopers, 6 sewing machines.

Rochester. Flower City Knitting Mill; start making fancy knit goods, etc.; 5 flat knitting machines, 3 sewing machines.

North Carolina, Asheboro. Randolph Silk Hosiery Mills; lease building and install f. f. knitting machines.

Asheville. Ray Hosiery Mills; start manufacture of men's hosiery, equipped with 50 knitting machines, 10 ribbers, 8 loopers.

Burlington. Carolina Knitting Mills; capitalize at $100,000; start manufacturing with 40 circular knitting machines.

Burlington. East End Hosiery Mill; begin manufacture of fancy half hose, equipped with 21 circular knitting machines, 5 ribbers, 5 loopers, 1 sewing machine.

Burlington. Grace Hosiery Mills; build plant and equip with 66 circular knitting machines.

Burlington. Holt Bros. Knitting Co., Inc.; construct 1-story, 55 x 110 ft. mill to house 50 circular knitting machines.

Burlington. S. S. Miller Hosiery Mills (Reading, Pa.); establish branch plant in leased quarters at Burlington; 70 knitting machines.

Burlington. Pen-Co. Hosiery Co.; install 20 H. H. machines in Coca Cola Bldg. and start manufacturing.

Burlington. Pickett Hosiery Mills; erect new mill and equip with 40 circular knitting machines.

Burlington. Rogers Hosiery Mill; start manufacturing with equipment of 40 f. f. knitting machines.

Bennett. Bennett Hosiery Mills; organize with $10,000 capital; erect new mill and equip with 50 knitting machines.

Dana. Chipman-Burrowes Hosiery Mills Co. (East Flat Rock, N. C.); start branch plant in leased quarters at Dana, equipped with 50 knitting machines.

Durham. Emory & Seagrove Hosiery Mill; starts operation with 14 knitting machines on fancy half hose; L. P. Seagrove is president.

Greensboro. Greensboro Full Fashioned Hosiery Mills; erect 1-story mill having 20,000 sq. ft. floor space; 24 knitting machines.

Greensboro. Juvenile Hosiery Mill; start erection of 1-story, 132 x 65 ft., plant for seamless hosiery.

Greensboro. Mock, Judson, Voehringer, Inc.; construct new mill and move machinery from Philadelphia; initial equipment, 30 f. f. knitting machines, 12 sewing machines, 12 loopers.

Hickory. Longview Hosiery Mills, Inc.; succeed to business of Shuford Hosiery Mills and transfer machinery from Bryson City to own building at Hickory; 50 knitting machines.

Lexington. Welborn Mills; build 1-story, 50 x 60 ft. mill and equip with 18 circular knitting machines.

Liberty. Dependable Hosiery Mills, Inc.; lease plant and equip with 41 circular knitting machines.

Mebane. Wyrick Hosiery Mills; construct new plant; 40 knitting machines.

Morganton. Morganton Full Fashioned Hosiery Co.; construct 3-story, 50 x 142 ft. plant and install 25 f. f. knitting machines.

Statesville. Bossong Hosiery Mill, Inc.; erecting 1-story brick mill in which to install machinery for full fashioned hosiery.

Statesville. Phoenix Mills, Inc.; establish branch mill at Statesville to which move 40% of machinery in Little Falls, N. Y., plant.

Taylorsville. Miller-White Hosiery Mills; construct 1-story, 40 x 40 ft. plant; equip with 3 ribbers, 2 loopers, 10 circular knitting machines.

Pennsylvania, Allentown. Arcadia Knitting Mills; erect new plant at Allentown and transfer machinery from Brooklyn, N. Y.; main building, 4-story, 66 x 240 ft.; also dyehouse and power house.

Chalfont. Chalfont Hosiery Mills; capital $125,000; new one story, 106 x 75 ft. building, equipped with 9 full fashioned knitting machines. J. L. Campbell, formerly with Doylestown Hosiery Mills is president.

Cheltenham. Danneman & Kuehnert Hosiery Co.; establishes plant with 20 full fashioned hosiery machines; Simon Danneman, treasurer; will later add dye house.

Coopersburg. Saucon Hosiery Mill; Ray A. Young, proprietor; starts manufacture of seamless silk and rayon hosiery with 12 280-needle knitting machines in new 2-story, 25 x 50 ft. plant.

Denver. Kaonia Blue Line Hosiery Mills; erects new 2-story plant, 110 x 106 ft., equipped with 12 full fashioned knitting machines.

Indiana. Indiana Textile Mills, Inc.; capital, $150,000; G. T. Buchanan, president; plan new 95 x 116 ft. mill to operate on hosiery.

Mifflinburg. Kooltex Underwear Corp.; acquires underwear machinery of West Branch Knitting Co., and starts manufacturing with about 60 knitting machines.

Philadelphia. Hadad Hosiery Co.; start making women's seamless silk hosiery with 48 knitting machines, 2 loopers, 2 sewing machines.

Philadelphia. M. E. Hall Knitting Mills; set up 10 knitting machines at 4949 Wakefield St., on sweater coats and bathing suits.

Philadelphia. Harmony Knitting Mills; begin producing knitted neckwear; 24 circular knitting machines, 3 sewing machines, 1 winder.

Philadelphia. Imperial Knitting Mills; start manufacture of neckwear with 100 circular and 3 flat knitting machines.

Philadelphia. M. B. Hosiery Co.; lease quarters at 1220 No. Lawrence St. and start manufacturing children's hosiery; capital, $50,000.

Philadelphia. Penns Valley Hosiery Mills; start Mill No. 2 in leased quarters; 100 Pigeon machines.

Philadelphia. Roosevelt Knitting Mills; begin producing sweaters and bathing suits equipped with 7 knitting machines, 1 winder, 10 sewing machines.

Philadelphia. Sport-Wear Hosiery Mills, Inc.; begin producing, equipped with 50 l. n. knitting maihines.

Philadelphia. Venus Silk Hosiery Co.; build 1-story, 47 x 150 ft. plant and equip with 15 f. f. knitting machines.

Philadelphia. Vogue Silk Hosiery Co.; lease space and install 15 f. f. knitting machines.

Pottstown. Glory Knitters; capital $50,000, install 10 knitting machines and start production of rayon underwear; M. E. Pierson is president; associated with Iris Knitting Corp.

Quakertown. Tohichen Hosiery Co., Inc.; capital $50,000; erect new mill and install 4 full fashioned hosiery machines. Edward Sielski is president.

Reading. Belle-Terre Hosiery Co., Inc.; capital $100,000; bought local mill building and installed 13 full fashioned hosiery machines; Stanley Bellemere is president.

Southhampton. Southhampton Knitting Mills; new building equipped with 11 full fashioned hosiery machines; Wolfgang Richter, Jr., is president.

Willow Grove. Society Maid Hosiery Mills; capital $200,000; erect new 1-story 90 x 100 ft. mill, equipped with 12 full fashioned knitting machines; Max A. Marschner is president.

Willow Grove. Willow Grove Hosiery Mills; start operations with 3 full fashioned hosiery machines; W. Paul Eifert is proprietor.

South Carolina, Union. Dainty Maid Silk Mills; capital $150,000; organization formerly operated at Gloversville as Tryon Silk Fabrics; W. S. Nicholson, president and treasurer.

Tennessee, Knoxville. Knoxville Cotton Mills; build 60 x 100 ft. addition to house knitting machines to knit part of yarn formerly sold to trade.

Morristown. Morristown Knitting Mills, Inc.; capital $25,000; start operations on infants' hosiery in leased mill; operate 40 knitting machines; H. F. Trobaugh, president and treasurer.

Shelbyville. American Hosiery Mills; capital $50,000; H. L. Woosley, president; install full fashioned hosiery machines; begin production early in 1928.

Smithville. Smithville Hosiery Mills; capital $26,000; operate 20 full fashioned hosiery machines in leased quarters. B. W. Foster, president.

Virginia, Narrows. Cavalier Hosiery Mills, Inc.; capital $50,000; lease space and install 16 circular knitting machines; later add 16 more machines.

Wisconsin, Milwaukee. Jupiter Knitting Co.; capital $25,000; new concern manufacturing knit goods, at 2413 Fondulac Avenue; P. H. Schmidt, president.

NEW SILK MILLS

Massachusetts, Clinton. Armion Textile Co. (subsidiary of Roubaix Mills); lease space and start spinning silk yarn.

New Jersey, Paterson. Emily Silk Co.; lease space and equip with 18 looms.

Paterson. Mial Woven Label Co.; organize and start making woven silk labels; 18 looms.

Paterson. Millinery Silks, Inc.; lease space and install 36 looms.

Paterson. Morrissee Silk Mills, Inc.; organize and start manufacturing with equipment of 54 box looms.

Paterson. Rosenfeld, Mandel & Schulz; start manufacture of broad silks; equipped with 20 looms.

West New York. North Hudson Ribbon Co., Inc.; begin manufacture of shoe binding ribbon in leased quarters; 10 looms.

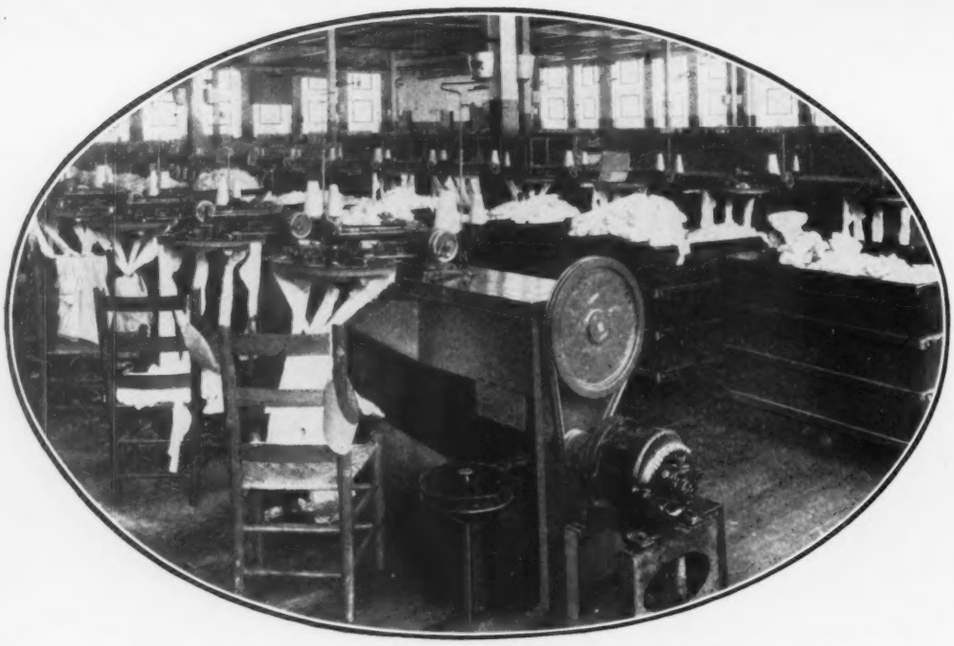
North Carolina, Burlington. North Carolina Silk Mills; build 1-story, 80 x 204 ft. mill and 50 houses for operatives; install 96 looms.

Burlington. Vistex Mills, Inc. (Philadelphia, Pa.); lease space at Burlington for branch mill; initial equipment 30 cop winders, 20 coners, 20 spoolers and supplementary equipment.

Goldsboro. Goldsboro Narrow Fabric Co.; transfer 40 looms from plant of Keene (N. H.) Artistic Narrow Web Co. to leased quarters at Goldsboro.

Lexington. Lexington Silk Mills, Inc.; organize with $200,000 capital; construct 1-story, 64 x 298 ft. mill; purchase 144 looms from Wechsler-Barber Silk Co., Paterson, N. J., and ship to new plant. (Later change name to Grimes Silk Mill, Inc.)

Mebane. Howard Silk Throwing Co.; lease



Lupton Steel Looping Machine Tables installed at the P. H. Hanes Knitting Mills, Winston-Salem, N. C.

Lupton Looping Machine Tables

Lupton Looping Machine Tables, the only steel compartment tables on the market, give operators complete protection and freedom for fast work.

They are made with three compartments—one enclosing the belt drive, one for ravellings and one for finished work. Of steel throughout and finished in velvet green enamel, baked on, these tables protect work from vermin, dirt and splinters. Tables can be joined to make long runs. Each table is punched to receive three machines of any make.

Ask for Catalogue T. E. 881

Lupton Steel Shelving

Clean, compact storage space for both raw and finished materials is provided at low cost by the several styles of Lupton Steel Shelving.

This equipment is ready for immediate delivery in Open and Closed Types, in large or small units. It can be easily erected anywhere and relocated whenever necessary. Shelves are all quickly adjustable to accommodate different sized loads side by side. Fireproof, sanitary and economical. Standard finish is velvet green enamel, baked on.

Ask for Catalogue "E"

DAVID LUPTON'S SONS COMPANY
2245 East Allegheny Avenue, Philadelphia

Boxed goods stored and classified in Lupton Steel Shelving at the Quaker Hosiery Co. plant, Philadelphia

Lupton Textile Mill Equipment includes

*Seaming Machine Tables	*Knitters' Benches	*Steel Shelving
*Looping Machine Tables	*Steel Work Boxes	*Special Steel Units
Trimming Machine Tables	Matching and Pairing Tables	Hosiery Trucks
*Bar Topping Tables	Boxing and Wrapping Tables	Drying Racks
Examining Tables	*Steel Work Tables	*Humidor Cabinets

*Carried in stock for immediate shipment. The stock Seaming Tables are arranged for Union Special Seamers. The stock Looping Tables are arranged for Steady Dial and Sotco Loopers.

Factory Equipment Includes

Steel Tool Cabinet	Steel Bench Drawer	Pipe and Bar Racks
Steel Storage Cabinet	Steel Bench Legs	Steel Factory Desk

Lupton STEEL **Textile Mill EQUIPMENT**

building at Mebane and transfer all machinery from Philadelphia; also add some new machinery.

Pennsylvania, Allentown. Hamilton Silk Corp.; start making broad silks in leased quarters; 540 spindles, 60 looms.

Allentown. Temple Silk Co.; begin manufacture of broad silks in leased quarters, equipped with 40 looms.

Bangor. F. O. Strouse, Inc.; establishes plant in two brick mill buildings, operating 288 spindles and 24 looms on crepe-de-chines; capitalize with $25,000.

Coopersburg. Coopersburg Silk Mills, Inc.; organized to manufacture silk goods; capital $25,000; Jules Van Houten is treasurer.

Pottstown. Pottstown Silk Throwing Co.; capital $30,000; building 1-story mill, ready for operations early in 1928.

Quakertown. Stessman & Schmitt; start commission throwing plant with 2500 spindles.

Shinglehouse. Shinglehouse Silk Corp.; capital $50,000; starts operations in leased building, with 50 looms on crepes; A. W. Briggs is president.

NEW RAYON MILLS

New Jersey, Gloucester City. Furness Corp.; new $10,000,000 corporation formed for rayon manufacture by process developed by W. H. Furness; said to be producing experimentally and first step will be to bring production in present location up to 10,000 lbs. daily; F. R. Hansel interested.

Haledon. Paul F. Pucci; start commission winding and copping in part of Cedar Cliff Mill; 4 winders, 9 coppers.

Paterson. Rosland Rayon Corp.; start plant with capacity of 12,000 lbs. per week; operating machinery of their own design; located in leased space. W. E. Rosenthal, president.

North Carolina, Burlington. Ground broken for new rayon manufacturing unit at Indian Village; initial investment said to be $8,000,000; Albert M. Johnson, president National Life Insurance Co., Chicago, head of financing group; Junius H. Harden interested; McNally Bldg. Co., Framingham, Mass., has building contract.

Tennessee, Elizabethton. American Glantzstoff Corp.; start erection of $3,500,000 unit, to produce rayon; expect plant to be in production October, 1928; capacity 4,500,000 lbs. of rayon; capitalized at $7,000,000; also erecting 200 homes for operatives, costing $3500 each; Dr. A. Mothwurf is president and treasurer.

NEW MISCELLANEOUS MILLS

California, Chula Vista. Imperial Linen Products Corp.; start construction of first unit of plant on hemp fiber.

Connecticut, Bethel. Bethel Bleachery, Inc.; incorporate for $50,000; start operations in leased quarters.

Norwich. Uncas Finishing Co.; organize with $100,000 capital; lease 25,000 sq. ft. space in former Shetucket plant and equip for dyeing, printing and finishing.

Illinois, Chicago. Viscose Rayon Dyeing Co.; lease space and start dyeing of rayon skeins, also winding, spooling, coning and tubing on commission; capacity 5,000 lbs. per day.

Peoria. Specialty Mattress Co.; construct new plant; 1-story, 80 x 128 ft.

Massachusetts, Brockton. Brockton Narrow Fabric Co.; organize with $25,000 capital; start making elastic and non-elastic webbing in leased quarters; 18 looms.

Concord Junction. Concord Garnett Mills, Inc.; organize and start operating with 4 pickers and 6 garnetts.

Northboro. Northboro Carding & Garnetting Co.; organize, install machinery and start up.

Michigan. Grand Rapids. Garfield Felt Corp. (Chicago, Ill.); start branch plant at Grand Rapids; 5 garnetts; 2 pickers.

Missouri, St. Louis. Sanotuf Mattress Co.; incorporate for $12,000; start manufacturing with 1 picker, 1 garnett, 1 tufting machine.

St. Louis. St. Louis Finishing Co.; organize with capital of $1,000,000; start cotton piece goods finishing in new 2-story brick building.

New Jersey, Orange. Orange Mattress Mfg. Co.; start manufacturing in leased quarters; 1 picker.

Paterson. American Textile Dyers, Inc.; capitalize at $50,000; start dyeing and finishing in leased quarters.

Paterson. Eastside Piece Dyeing & Finishing Co.; start dyeing and finishing silks in leased quarters.

Paterson. Garino & Sons Piece Dyeing & Finishing Co.; erect plant and start dyeing, finishing and weighting silks.

Paterson. Pilgrim Piece Dye Works, Inc.; lease space and equip for dyeing silk, silk mixtures, cotton, etc.

Paterson. Rainbow Dyeing Co., Inc.; organize with capital of $100,000; start operations.

Paterson. Sherwood Piece Dye Works; start dyeing, finishing and weighting silks.

Paterson. United Manufacturing Co.; lease space and equip for making batts, felts, mattresses, etc.

Paterson. Universal Piece Dye Works, Inc.; organize and start operations.

Rutherford. Seiter-Heilman-Young, Inc.; lease space and begin dyeing silk and silk mixed goods; capacity 600 lbs. per day.

Union City. M. & H. Silk Finishing Co.; organize with capital of $75,000; start operations.

West New York. Record Mfg. Co.; lease space and equip with 10 Schiffli machines.

New York, New York. French Hand Printing Co.; capital $25,000; starts operations on block printing at 464 West Broadway; Victor Delorme is president.

New York. Portland Dye Works, Inc.; organize with $10,000 capital; start dyeing and finishing in leased quarters.

North Carolina, Belmont. Thies Dyeing & Processing Co. of N. C.; erect 1-story and basement, 218 x 143 ft. plant; capacity 100,000 lbs. per week.

Burlington. Burlington Processing Co.; acquire building, alter, and install machinery from plant of Peech Sons & Phillips Co., Camden, N. J.; also additional new machinery.

Charlotte. Industrial Dyeing Corp. of N. C. (branch of Industrial Dyeing Co., New York); lease new building and install new machinery for rayon yarn dyeing.

Charlotte. Southern Friction Fabric Co.; starts plant producing brake lining and other asbestos products, on 6 looms.

Interior of Peerless Woolen Mills Addition at Rossville, Ga.

Davidson. Kubar Mfg. Co.; start manufacture of asbestos yarns in former Linden Mill.

Minneapolis. National Asbestos Co.; erect 2-story, 80 x 160 ft. plant; equip for making asbestos fiber.

Mt. Holly. Carolina Dyeing & Winding Co.; lease new plant; will equip for dyeing and winding on commission for weaving and knitting mills.

Ohio, Toledo. Toledo Auto Fabric Co.; erect 2-story plant and start producing coated fabrics.

Pennsylvania, Philadelphia. Breslin Textile Mills, Inc.; install 40 looms on tapestry and art burlap; H. S. Royle is president.

Philadelphia. Buckeye Finishing Works; start operations at Hunting Park Ave. and Marshall St.

Philadelphia. Fertex Dyeing & Finishing Co.; organize with $25,000 capital; start dyeing and finishing at 2627 N. Howard St.

Philadelphia. Schlatter Dyeing & Converting Co.; erect building at Rorer & Ontario Sts. for textile finishing.

Philadelphia. Venango Dye Works; hosiery dyeing of all kinds, at Tulip and Venango Sts.

Rhode Island, Central Falls. Ferguson & Co.; starts business of dyeing rayon; M. A. Craven and F. J. Ferguson partners.

Central Falls. Supreme Art Silk Dyeing Corp.; capital $50,000; starts operations in leased quarters; George Silver is president.

South Carolina, Anderson. Gossett Dyeing & Finishing Co.; capital $200,000; erected new plant, 1-story, 150 x 160 ft. at cost of $150,000, to dye, bleach and finish cotton goods; James P. Gossett, chairman of board; S. H. Lander, president and treasurer.

Hartsville. Hartsville Bleachery; project backed by Fred B. Voegeli, president of Easton (Pa.) Finishing Co., main building to be 800 ft long; project to involve about $500,000.

Taylors. Piedmont Print Works, new printing and dyeing plant about to be erected near southern bleachery; capital $1,000,000; W. H. Bannon, president and H. R. Stephenson, secretary-treasurer; printing machinery to be removed from East; finishing machinery to be new.

West Virginia, Martinsburg. Temple Braid Co.; capital $100,000; remodelling building for mill use.

Canada, Quebec, Thetford Mines. Asbestos Corp.; constructs 4-story, 85 x 204 ft., plant to handle asbestos fibers.

Enlargements and Improvements

COTTON MILLS

Alabama, Alabama City. Dwight Mfg. Co.; construct 2-story, 132 x 154 ft. extension to warehouse; also 150 houses for operatives.

Alexander City. Russell Mfg. Co.; install 1,000 looms.

Anniston. American Net & Twine Co.; construct 2-story, 114 x 114 ft. extension to house 4,104 additional spindles.

Anniston. J. A. Meinhardt Co. Inc.; installs 1,000 additional spindles.

Chisholm. West Boylston Mfg. Co., of Alabama; erects new mill with main building, 134 x 452 ft., also 100 houses for operatives; machinery being removed from plants in Massachusetts.

Decatur. Connecticut Mills Co.; complete transfer of 32,000 spindles from Globe Yarn Dept., Fall River, Mass., and twisting and weaving machinery from Connecticut Mills, Danielson, Conn., to new plant at Decatur.

Fairfax. West Point Mfg. Co.; erect 2-story, 250 x 110 ft. addition to Riverdale Mill, Riverview, Ala.; also 2-story, 64 x 100 ft. extension to Fairfax Mills.

Florence. Cherry Cotton Mills; install 372 additional twister spindles.

Huntsville. Dallas Mfg. Co.; install 4,480 additional spindles.

Huntsville. Lincoln Mills of Alabama; build Mill No. 3; 3 stories and basement, 132 x 240 ft., to be equipped at start with 10,000 spindles and few duck looms; also houses for operatives.

Opp. Opp Cotton Mills; construct 1-story, 106 x 225 ft. extension to house 5,000 additional spindles and 160 looms; 40 houses for operatives.

Scottsboro. Bungalow Rug Factory; construct 2-story brick building to house rug plant; install additional looms.

Arkansas, Fort Smith. Tucker Duck & Rubber Co; build 1-story, 75 x 100 ft. addition.

Morrilton. Morrilton Cotton Mills, Inc.; complete new plant started last year; transfer machinery from Groveville, N. J.; 10,300 spindles, 48 looms.

California, Los Angeles. J. & J. Cash, Inc.; construct new 1-story, 50 x 130 ft. mill at cost of $25,000; move into; add machinery.

Monrovia. California Textile Products Co.; build 2 additions; 1-story, 30 x 70 ft. and 1-story, 30 x 40 ft.

Connecticut, Middletown. Colonial Lace Mfg. Co.; organize with capital of $50,000; take over plant of Wilcox Lace Co. and start production.

Putnam. Adams Mfg. Co.; install 56 additional automatic looms.

Georgia, Atco. American Textile Co.; construct 4-story, 130 x 290 ft. extension to house 17,000 additional spindles.

Atlanta. Sealy Mattress Co.; starts new plant with 5 felt machines and 7 pickers.

Carrollton. Carroll Mills; purchase machinery to increase production 20%.

Columbus. Bibb Mfg. Co.; erect 3-story, 280 x 75 ft. warehouse.

Columbus. Swift Spinning Mills; construct 3-story, 150 x 133 ft. mill addition.

Dallas. Dalla-Noval Yarn Mill; acquire Liberty Cotton Mills; add raw stock dyeing plant and new winders.

Eastman. Eastman Cotton Mills; complete 1-story, 125 x 380 ft. extension started last year, to house 10,000 spindles.

Forsyth. Trio Mfg. Co.; build extension to house 1,000 additional spindles.

Gainesville. Chicopee Mfg. Corp. of Georgia; complete new plant and village started last year; begin production with 29,600 spindles and 1,000 looms.

Gainesville. Gainesville Cotton Mills; erect addition and increase number of looms from 1,220 to 1,740.

Lafayette. Lafayette Cotton Mills; start erection of addition to house 5,000 spindles and 110 looms; also office building and cottages.

Lavonia. Lavonia Mfg. Co.; complete new opener room and install new cotton cleaning machine and breaker picker; also install high speed warper; electrify plant; build houses for operatives.

Lindale. Massachusetts Cotton Mills; construct 2-story, 54 x 150 ft. addition to dyehouse.

Newnan. Arnco Mills; complete new mill started last year; construct 1-story, 150 x 436 ft. extension.

Rossville. Peerless Woolen Mills; complete addition started last year and install 120 looms; construct new boiler house.

Trion. Trion Co.; construct 25,000 spindle addition; also houses for operatives.

Massachusetts, Fall River. Howard-Arthur Mills, Inc.; organize and take over Seaconnet Mills; electrify plant and install some new machinery.

Lowell. Massachusetts Cotton Mills; install machinery to wind, size and otherwise prepare rayon for weaving.

Hebronville. Ray Cotton Co., of Woonsocket, R. I.; leases former Hebronville Mills, and will concentrate its cotton waste business at this new location.

New Bedford. Firestone Cotton Mills; purchase Manomet Mill No. 4 and start operations.

Walpole. Multibestos Co.; erect 1-story, 84 x 30 ft. mill addition at cost of $40,000 with equipment.

Mississippi, West Point. Aponaug Mfg. Co. (Jackson, Miss.); purchase Wayne Cotton Mills and start up.

Yazoo City. Cotton Mills Products Co.; install 8 cards and 28 additional looms in Yazoo City mill; 106 additional looms and 16 spinning frames in Natchez mill; 6 intermediates, 24 cards and 2 pickers in Mobile, Ala., mill.

New Hampshire, Exeter. Exeter Mfg. Co.; complete enlargement of bleachery; install 300 additional looms.

New Jersey, Medford. Medford Textile Mills, Inc.; build addition to plant.

Paterson. William Daiby; move to larger quarters and install 2 additional lace machines and 1 warper.

New York, Dunkirk. Lake Shore Towel Mills; begin manufacturing in former Dunkirk Towel Mills, equipped with 20 narrow looms.

North Carolina, Belmont. Acme Spinning Co.; build 125 x 617 ft. extension and install 16,560 additional spindles.

Burlington. Alamance Novelty Mills; complete mill started last year; start production with 100 broad looms.

Burlington. King Cotton Mills Corp.; build 75 x 100 ft. extension.

Cherryville. Carlton Yarn Mills; erect new picker room and increase spinning capacity.

China Grove. Patterson Mfg. Co.; build 1-story, 110 x 260 ft. weave shed, 1-story, 36 x 80 ft. slasher room, 2 1-story warehouses, 36 x 100 ft. and 50 x 60 ft., and an addition to picker room, 1-story, 16 x 99 ft.; replace some old equipment.

Cliffside. Cliffside Mills; erect 4-story, 88 x 110 ft. warehouse.

Concord. Brown Mfg. Co.; construct 2-story addition having 32,000 sq. ft. space.

Concord. Locke Cotton Mills Co.; construct extension to card room to house 33 additional sets cards.

Ellenboro. Ellenboro Mfg. Co.; construct 1-story, 196 x 80 ft. extension; install 40 additional looms and 3,000 spindles.

Forest City. Alexander Mfg. Co.; install 40 additional 90-in. looms.

Gastonia. Gastonia Weaving Co.; install 10 additional looms.

Gastonia. Osceola Mills, Inc.; purchase Mountain View Mill.

Gastonia. Ranlo Mfg. Co.; build 1-story, 78 x 92 ft. addition; install 18 twisters for cable cord, 1,512 spindles.

Graham. Oneida Cotton Mills; build picker room, 40 x 100 ft.; also new opener and cleaning room about same size; install some new pickers and cleaners and automatic cotton baling press.

Greensboro. Proximity Mfg. Co.; start excavation for new weave shed to house 1,000 additional looms.

Greensboro. Southern Webbing Mills, Inc.; constructing new building, 2-story, 100 x 116 ft. into which plant will shortly be moved.

Greensboro. Revolution Cotton Mills; build 2-story, 53 x 138 ft. bleachery and dyehouse.

Kannapolis. Cannon Mfg. Co.; complete 50,000 spindle addition started last year; also build 1 and 2-story, 278 x 321 ft. bleachery.

King's Mountain. Dilling Cotton Mills; 5,040 twister spindles and 5 spoolers; construct 10 new tenements and 20-room boarding house.

King's Mountain. Neisler Mills, Inc.; organize with $1,200,000 authorized capital; take over Margrace, Pauline and Patricia Mills.

Kings Mountain. Park Yarn Mills Co. of the Johnston Mills group; converted from coarse yarn mill to fine combed yarn mill.

Kings Mountain. Sadie Cotton Mill Co.; construct 2-story, 104 x 128 ft. extension.

Lincolnton. Rhodes-Rhyne Mfg. Co.; add 1,000 spindles and 18 wide looms; build addition for slasher room and dyehouse.

Lumberton. Jennings Cotton Mills; build 1-story, 133 x 140 ft. weave shed and 30 cottages; install 168 additional looms.

Marion. Cross Cotton Mills Co.; build extension to house 17 new cards, 1,000 spindles, 36 delliveries drawing frames and 1 winder.

Marshall. Marshall Mill & Power Co.; organize with $150,000 capital; take over and start operation of plant of Capitola

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Atlanta, Ga.

Mfg. Co.; build third story extension to mill.

Rockingham. **Hannah Pickett Mills**; complete installation of 200 additional looms started last year.

Ronda. **Arcadia Cotton Mills, Inc.**; organize to operate on lease the Wilco Mills, formerly Ronda Cotton Mills; install additional cards.

Saxapahaw. **Sellers Mfg. Co.**; take over and start operation of Saxapahaw Cotton Mills.

Statesville. **Gagner Mfg. Co., of Adams, Mass.**; erecting new mill, 1-story, 92 x 215 ft., to which machinery from Adams will be moved.

Statesville. **Statesville Cotton Mills**; install 5,068 additional spindles.

Troutmans. **Hall-Kale Mfg. Co.**; build 1-story extension to house 12 cards, 3,268 spindles and auxiliary machinery.

Troy. **Troy Cotton Mills Co.**; organize with $200,000 authorized capital; succeed to Rhyne-Anderson Mills Co.

Winston-Salem. **Arista Mills Co.**; build 75 x 100 ft. card room, 50 x 90 ft. spinning room and 100 x 124 ft. weave room extensions to Southside Mill and move machinery from Arista Mill into new buildings; also erect 35 houses for operatives.

Oklahoma, Guthrie. **Pioneer Mills**; take over and start operation of Pioneer Cotton Mills; install miscellaneous new machinery.

Pennsylvania, Chester. **Aberfoyle Mfg. Co.**; completes new boiler plant; also takes over mercerizing plant of Belmont (N. C.) Processing Co.

Chester. **Parkmount Mills**; purchase J. E. Fricke plant and install $100,000 worth of machinery for manufacturing of cotton and woolen goods

Clarks Summit. **Scranton Lace Co.**; erecting new branch mill at cost of $30,000.

Doylestown. **Derk Mfg. Co.**; erects new mill building and transfers machinery from previous location, adding additional looms to bring number to 76.

Philadelphia. **Bellfield Mfg. Co.**; capital $50,000; installs machinery in leased space at Germantown for mfg. of plushes and velours.

Philadelphia. **Breslin Textile Mills**; install 40 new looms in Frankford plant.

Philadelphia. **F. Burkhart Mfg. Co.**; purchase plant of Fred R. Gerry Co.; also buy 4 sets cards, 15 garnetts and 2 pickers from Oscar Smith & Sons Co. and transfer to former Gerry plant.

Philadelphia. **Collins & Aikman Corp.**; take over business and assets of Collins & Aikman Co., A. T. Baker & Co., Manayunk, Pa., and Roxboro, N. C., Cranston Worsted Mills, Bristol, R. I., and Fred Pearson & Co., Inc., Manayunk; erect $40,000 addition.

Philadelphia. **Craftex Mills, Inc.**; build addition at cost of $37,500.

Philadelphia. **Hoffman-Crown Mfg. Co.**; removes to new location at 1320 No. Lawrence St. and installs 50 looms.

Philadelphia. **La France Textile Industries (Frankford)**; erect new mill building at cost of $40,000, also office building, costing $40,000.

Philadelphia. **W. H. & A. E. Margerison & Co.**; erect new warehouse at cost of $75,000.

Philadelphia. **Sheppard Mfg. Co. (Manayunk)**; install 20 looms for making plushes and velvets.

Philadelphia. **U. S. Pile Fabric Co (Frankford)**; install 8 additional looms.

Scranton. **Scranton Lace Co.**; erecting 3-story, 75 x 155 ft. mill addition for expansion.

Rhode Island, Pawtucket. **Central Warp Co.**; install new, up-to-date machinery for winding and slashing.

Pawtucket. **Fisk Rubber Co.**; installs automatic spoolers and high speed warpers at Ninigret Division.

Pawtucket. **Tubuler Woven Fabric Co.**; erects 1-story brick addition, with about 10,000 sq. ft. floor space.

Woonsocket. **Rhode Island Plush Mills**; erect 2-story, 46 x 150 ft. extension; to be used for storage.

South Carolina, Anderson. **Appleton Mfg. Co.**; erect 2-story 100 x 100 ft. cotton warehouse; start construction of plant to house 30,000 spindles from Appleton plant at Lowell; install 100 additional looms; build 25 houses for operatives.

Anderson. **Orr Cotton Mills**; erect 25 houses for operatives at cost of $40,000.

Arcadia. **Arcadia Mills**; install 5,000 additional spindles and 200 additional looms in No. 2 mill.

Aurun. **Pendleton Mfg. Co.**; building extension to weave shed to house additional looms.

Belton. **Blair Mills**; erect $25,000 extension for additional machinery.

Clearwater. **Seminole Mills**; erect 40 4-room houses for employes.

Clinton. **Clinton Cotton Mills**; install 20 new cards; plan installation of 11,000 spindles as soon as floor space is provided.

Columbia. **Columbia Mills Co.**; replace considerable old machinery with new, including installation of 28,000 spindles; cost of renovation about $750,000.

Easley. **Easley Cotton Mills**; adding 60 new houses for operatives.

Fort Mill. **Fort Mill Mfg. Co.**; erecting new bleachery building and laying water main for industrial and community use.

Greenville. **American Spinning Co.**; erects 35 houses for operatives.

Greenville. **Brandon Mills**; install new opening and cleaning machinery, and automatic spooling and warping equipment.

Greenville. **Dunean Mills**; buy 700 new looms for replacement.

Greenville. **Victor-Monaghan Co.**; installs new dyeing equipment with capacity of 10,000 lbs. per week.

Greenwood. **Greenwood Cotton Mills**; preparing additional space to house more spindles and also an addition to their power plant.

Greer. **Victor-Monaghan Co.**; installs 248 looms, replacing old equipment.

Honea Path. **Chiquola Mfg. Co.**; erecting 4-story, 131 x 130 ft. extension to house 5,000 spindles, and give space for further expansion.

Inman. **Inman Mills**; erecting 4-story addition, 78 x 155 ft.

Lando. **Manetta Mills**; install 100 blanket looms; also nappers and other finishing machinery.

Laurens. **Pioneer Braid Corp. of New York**; transfers machinery to new building at Laurens; incorporates new company for $250,000.

Laurens. **Watts Mills**; install 496 new looms, replacing old looms; also built addition to warehouse.

Newberry. **Mollohon Mfg. Co.**; installs 8,000 additional spindles.

Newberry. **Oakland Cotton Mills**, construct 55 new houses for operatives.

Orangeburg. **Santee Mills**; install 200 new looms to replace similar number of old ones.

Pelham. **Enoree Converting Co.**; acquire building and plan transfer of machinery from the North for the production of thread.

Pelzer. **Pelzer Mfg. Co.**; replaces 200 narrow looms with broad looms.

Pickens. **Pickens Mill**; erects 65 new houses for operatives.

Rock Hill. **Aragon-Baldwin Cotton Mills**; install 2,240 additional spindles.

Travelers Rest. **Renfrew Plant**; weave shed 138 x 280 ft. and finishing building 309 x 203 ft., both 1-story; will operate under management of A. W. Smith, president of Brandon Mills.

Ware Shoals. **Ware Shoals Mfg. Co.**; builds addition 304 x 134 ft., and 3 and 4 stories high; giving space for more spindles and finishing machinery.

Wellford. **Jackson Mills**; build 74 x 100 ft., 3-story addition to plant No. 2, to house 100 additional looms.

Williamston. **Williamston Mills**; construct new opening room 22 x 100 ft.

Woodruff. **Mills Mill**; building addition, 159 x 125 ft., 2-story, to weave shed and 1-story, 300 x 193 ft., extension to house 10,000 spindles and 700 looms.

York. **Cannon Mfg. Co.**; constructs new picker room.

Tennessee, Chattanooga. **Dixie Mercerizing Co.**; erect extension 363 x 100 ft., providing space for 16,000 additional spindles, also build 60 cottages for operatives and new cotton opening building, 60 x 60 ft.

Kingsport. **Borden Mills Inc.**; build 100 houses for operatives.

Nashville. **Morgan & Hamilton Co.**; erects addition 88 x 109 ft., 1-story, to Wariato Cotton Mills; install additional preparatory machinery; replaces old looms with new ones.

Texas, Dallas. **C. R. Miller Mfg. Co.**; erects addition housing 25,000 spindles at McKinney Plant; also adds 5,000 spindles and 144 looms to Dallas plant, and 2,000 spindles to Waco plant.

El Paso. **El Paso Cotton Mills Co.**; erects 75 x 106 ft. addition and new office building; installs 3000 additional spindles and 100 new looms.

Wisconsin, Janesville, **Hough Shade Corp.**; erects 2-story, 80 x 80 ft., addition for expansion.

Canada, Ontario, Guelph. **Regent Textiles, Ltd.** Erect additional story on mill. Install 10 new cards and 960 spindles.

Ontario, Woodstock. **LaFrance Plushes, Ltd.**; installs machinery in former Worsted Spinning Mills; company is subsidiary of La France Textile Industries.

Quebec, Magog. **Dominion Textile Co., Ltd.**, erects 3-story, 260 x 66 ft., extension and installs 9 printing machines; also 3-story, 360 x 100 ft., bleachery, and 3-story, 137 x 154 ft. warehouse; installs 540 new looms.

Quebec, Montmorency Falls. **Dominion Textile Co. Ltd.**; erecting new building, 5-story, 260 x 100 ft., for a program of expansion.

WOOL MILLS

California, Santa Ana. **California Woolen Mills**; purchase Santacala Woolen Mills; plan to install additional machinery.

Connecticut, East Lyme. **E. P. Barber Mfg. Co.**; organize with $100,000 capital; purchase property of Niantic Mfg. Co and start manufacturing.

Rockville. **Summerville (Conn.) Mfg. Co.**; purchases building Heminway plant at Rockville, makes use of its water power, and plans expansion by using building for manufacturing.

Somerville. **Somerville Mfg. Co.**; construct 4-story, 120 x 30 ft. brick and steel building to replace old structure; also 4-story, 36 x 56 ft. and 4-story, 54 x 55 ft. mill additions; install 4 additional looms and 1,000 spindles.

Talcottville. **Talcott Bros. Co.**; build 2-story, 56 x 50 ft. addition for expansion of carding and twisting departments.

Iowa, Cedar Falls. **W. J. Bowen & Son**; purchase plant and equip with 6 sets, 1,800 spindles and 20 looms; start up as Cedar Falls Woolen Mills after Nashua Woolen Mills burn.

Kentucky, Mayfield. **Mayfield Woolen Mills**; build 1-story, 82 x 115 ft. warehouse.

Maine, Lewiston. **W. S. Libbey Co.**; erect 1-story, 130 x 60 ft. dyehouse at Lincoln Mill and transfer dyeing equipment from Cumberland Mill to Lincoln plant, replace some old looms with new.

Limerick. **Limerick Mills**; build 4-story, 385 x 40 ft. extension to house 6,000 additional spindles; complete 4-story, 402 x 45 ft. extension for 10,000 spindles, started last year.

Lincoln. **Lincolnfield Mills, Inc.**; purchase plant formerly Lincoln Worsted Co., and plan to install additional finishing equipment.

Wilton. **Wilton Woolen Co.**; erects addition to plant.

Winthrop. **Winthrop Mills Co.**; construct 4-story and basement extension.

Massachusetts, Caryville. **Taft Woolen Co.**; build 1-story, 45 x 112 ft. dyehouse.

Cherry Valley. **Channing Smith Textile Corp.**; erects 48 x 40 ft. power plant extension.

East Brookfield. **Daniels Mfg. Co.**; complete mill addition started last year and install 6 cards, 3 pickers, 2 fearnaughts and 9,360-spindle mules; also additional finishing machinery.

East Douglas. **Hayward Woolen Co.**; install 42 new automatic looms.

Hinsdale. **Hinsdale Woolen Mills**; install 6 additional looms.

Lawrence. **Gurnet Mills**; move machinery from Plymouth, Mass. to Lawrence; also install additional machinery.

Monson. **A. D. Ellis Mills, Inc.**; erect addition for use as weave shed.

Northboro. **Chilton Co. (Webster, Mass.)**; purchase Northdale Woolen Mills and start up on production of carpet yarns.

North Oxford. **Oxford Woolen Co.**; purchase Mill No. 1 of Ivanhoe Woolen Mills Co.; install 18 broad looms.

North Oxford. **David N. Taft**; build 1-story, 30 x 40 ft. storehouse; install new water wheel.

Rochdale. **E. G. Carlton & Sons**; erect burling room addition; 2-story, 14 x 62 ft.; install semi-decating machine, folder and winder.

Uxbridge. **Bellingham Woolen Co.**; lease former Hecla Mill of American Woolen Co. and start operations.

Uxbridge. **Waucantuck Mills**; construct new dyehouse and install additional dyeing equipment.

West Medway. **Stone Mill Co.**; erect 1-story, 120 x 60 ft. addition; install 2 additional sets cards and 2 mules.

Worcester. **Bell Co.**; install 8 worsted cards, 12 combs and 5,600 spindles.

Worcester. **M. J. Whittall Associates**; construct 2-story, 60 x 220 ft. machine shop and winding and finishing building.

Worcester. **Worcester Woolen Mill**; build 1-story, 42 x 81 ft. addition to dyehouse at cost of $13,500; install 4 dyeing machines with necessary conveyor and extractor equipment; also 20 automatic looms.

Michigan, Columbiaville. **Columbiaville Woolen Co.**; install 20 narrow looms and auxiliary machinery for carpet production.

New York, Brooklyn. **Monarch Felt Works, Inc.**; move to larger quarters at Bush Terminal; install additional machinery.

Salamanca. **Salamanca Wool Combing Corp.**; organize with $100,000 capital to take over mill of Midland Wool Combing Co.; start up.

North Carolina, Elkin. **Chatham Mfg. Co.**; starts erection of 3-story, 112 x 159 ft., addition; plans increase of 33% in production.

Oregon, Portland. **Oregon Worsted Co.**; completes two small additions to be used for expansion.

Pennsylvania, Bloomsburg. **Magee Carpet Co.**; adds new power house, 60 x 81 ft. with 2-600 H. P. boilers.

Bridgeport, **James Lees & Sons Co.**; awards contract for 5-story mill addition.

Carlisle. **C. H. Masland & Sons, Inc.**; erects office building, 40 x 80 ft.; also purchases site for new mill building, 150 x 160 ft., which will be their eighth unit. Additional machinery will be installed.

Chester. **Rosanna Mill, Inc.**; installs additional looms on plushes; also acquire plant of S. A. Crozer & Son at Upland.

Philadelphia. **Firmanley Worsted Co.**; move to larger quarters and install additional equipment.

Philadelphia. **Hardwick, Magee Co.**; purchase mill of John P. Holt, Inc.

Philadelphia. **Philadelphia Wool Scouring & Carbonizing Co.**; erect 1-story, 80 x 302 ft. storehouse.

Philadelphia. **Saguer Worsted Mills (Germantown)**; acquire Henrietta Worsted Mills and start manufacturing with 40 broad looms.

Philadelphia. **Wm. Spink Co. (Manayunk)**; erect new mill building, costing $50,000.

Philadelphia. **Torresdale Worsted Mills (Frankford)**; organize and begin manufacturing upholstery fabrics in building formerly occupied by Berkshire Mfg. Co., with 10 looms.

Rhode Island, Bristol. **Cranston Worsted Mills**; recently merged with Collins & Aikman Co., start erection of 1-story, 33 x 49 ft. addition.

Central Falls. **Lexington Worsted Mills, Inc.**; move plant to larger quarters and increase capital to $50,000.

Central Falls. **Stokes-Brooks Worsted Co.**; moves into plant formerly used by Broadloom Fabrics, Inc., and will install additional looms.

Providence. **Atlantic Mills**; erect new 4-story mill addition costing $100,000. Also addition to filter plant, and 2-story addition to be used as waste house.

Providence. **Wanskuck Co.**; erects 2-story mill addition, 50 x 60 ft.

Woonsocket. **Planet Worsted Mills Inc.**; lease local plant formerly operated by Clydesdale Worsted Co. and start production of worsteds.

Woonsocket. **Sydney Worsted Mill**; build 1-story, 50 x 85 ft. addition.

Woonsocket. **Woonsocket Spinning Co.**; erects new dye house, 82 x 68 ft. for woolen and rayon yarns; also one-story 35 x 57 ft. mill addition.

South Carolina, Greenville. **Southern Worsted Corp.**; installs 40 additional looms, giving plant a total of 160.

Tennessee, Knoxville. **Jefferson Woolen Mills**; erect extension to weave room; also dye house and office building.

Sweetwater. **American Textile Woolen Co.**; erect 1-story, 86 x 180 ft. weave shed.

Utah, Provo. **Knight Woolen Mills**; install new dresser, two sets of cards and 100 additional spindles.

Virginia, Winchester. **Arthur G. Jones Woolen Mills Corp.**; builds 2-story 65 x 80 ft. addition; installs 30 additional looms.

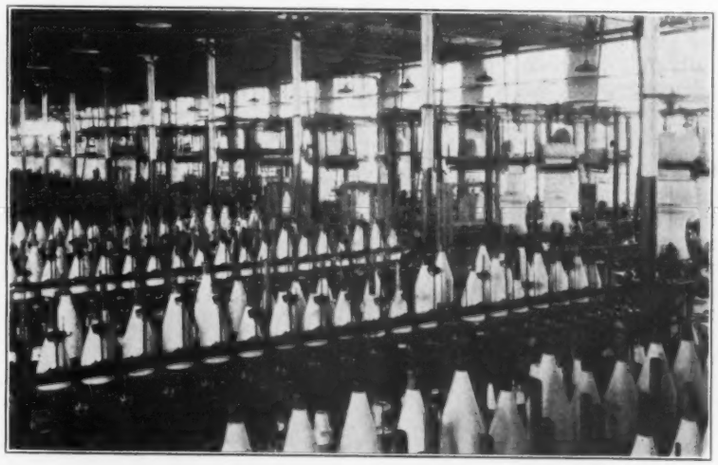
Washington, Washougal. **Washougal Woolen Mills**; increase floor space and install new cards.

Wisconsin, Milwaukee. **American Hair Felt Co.**; erects addition 1-story 60 x 160 ft. for storage; also 34 x 88 ft. addition to power plant.

Canada, Ontario, Oshawa. **Oriental Textiles Co., Ltd**; erects 3-story, 61 x 78 ft., addition, including new boiler house; adds 21 looms.

Ontario, Peterboro. **Brinton Carpet Co**; erects 1-story addition, 65 x 215 ft., and installs 24 Axminster and auxiliary equipment.

Quebec, St. Hyacinthe. **Penmans' Ltd.**;



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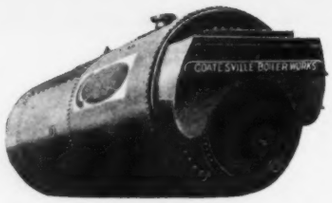

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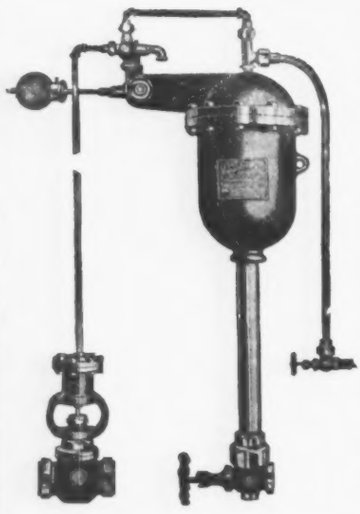

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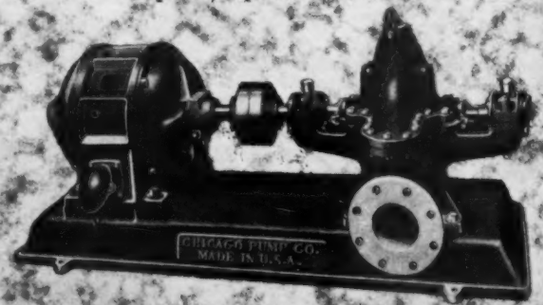

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KNITTING MILLS

Alabama, Anniston. Utica (N. Y.) Knitting Co.; purchase Anniston branch of Avalon Knitwear Co.; build 1-story, 80 x 200 ft. extension.

Athens. Volunteer Knitting Mills (Chattanooga, Tenn.); acquire Wellman Cotton Mill, Athens, and entire equipment of A. V. Morris & Sons, Amsterdam, N. Y.; transfer knitting machinery from Amsterdam to Athens.

Athens. Wellman Cotton Mill Co.; adds 5000 spindles and also installs more knitting machines.

Decatur. Cooper, Wells & Co.; construct new building for full fashioned hosiery production; 1-story, 74 x 140 ft.; 18 f. f. knitting machines.

Florence. Gardiner-Warring Co.; complete construction of new plant started last year and transfer machinery from Amsterdam, N. Y.; 130 knitting and 230 sewing machines.

Fort Wayne. W. B. Davis & Son; build 2-story, 75 x 200 ft. extension; add 65 Ln. knitting machines, 10 loopers, 25 ribbers.

California, Los Angeles. Moss-Power Knitting Mills; incorporate for $50,000; succeed Moss Knitting Mills; move to large quarters; install additional machinery.

Georgia, Acworth. Unique Knitting Co.; complete plant started last year; 150 knitting machines, 25 loopers, 20 sewing machines.

Cedartown. H. J. Regar & Sons Co.; acquires old plant of Barnes Knitting Co; will use 75 machines already in Barnes plant and will install 150 more; product is seamless hosiery.

East Point. Oak Mfg. Co.; purchase East Point plant of Lullwater Mfg. Co. and move machinery from Arcade and Syracuse, N. Y., to East Point.

Rome. Rome Hosiery Mills; construct Mill No. 2; install 370 additional latch needle knitting machines, 72 loopers, 75 ribbers, 10 sewing machines.

Indiana, Indianapolis. Real Silk Hosiery Mills; install 65 additional full fashioned knitting machines.

Iowa, Des Moines. Rollins Hosiery Mills; builds 1-story, 80 x 240 ft. extension.

Maryland, Boonsboro. J. C. Roulette & Sons, Inc. (Hagerstown, Md.); lease building at Boonsboro for branch plant; transfer 25 sewing machines there.

Massachusetts, Holyoke. Holyoke Silk Hosiery Co.; install 6 additional f. f. knitting machines.

Lowell. Kraft Knitters, Inc.; operate plant formerly Johnson-Bonner, Inc., running 3 knitting machines and 3 loopers.

Newton. Security Mills, Inc.; erect concrete addition to mill building.

Northampton. McCallum Hosiery Co.; install 16 additional f. f. knitting machines; build new dyehouse; transfer 5 knitting machines from Providence mill to Northampton.

Ware. Ware Valley Mfg. Co.; purchase underwear business and Mill No. 3 of Otis Co. and start up.

Minneapolis. Strutwear Knitting Co.; build 3-story and basement addition for full fashioned expansion at cost of $150,000.

New Jersey, Clifton. Conrad Hosiery Co.; install 8 f. f. knitting machines.

Paterson. Doris Silk Hosiery Co.; installs additional machinery to increase production of chiffon hosiery.

Robbinsville. Horstmann-Columbia Co.; purchase plant and equipment of Charles Koppel; transfer knitting machinery from Philadelphia to Robbinsville.

New York, Cohoes. Electric Knitting Co.; lease space in former plant of Wm. Moore Knitting Co. and install new bleaching equipment there.

Cohoes. Putnam Knitting Co.; build 1-story, 22 x 35 ft. addition for office purposes.

Elmhurst. Propper Silk Hosiery Mills; install new equipment, including 8 full fashioned hosiery machines.

Fort Plain. Montgomery Textile Co. (formerly Bell & Spencer); erect new 2-story, 50 x 80 ft. plant at Fort Plain; transfer machinery from Amsterdam and add 4 tricot and 2 milanese machines.

Johnstown. Diana Knitting Co.; erects 25 x 80 ft. addition to relieve crowding in several departments.

Poughkeepsie. Lawrence-Morley Textiles, Inc.; incorporate for $100,000; succeed to business of W. A. Lawrence Mfg. Co. and Acme Silk Mills; add finishing plant.

St. Johnsville. Luxor Textiles, Inc.; purchase plant formerly operated by Lion Mfg. Co.; buy entire equipment of Wuerdeman Textile Mills, Fort Plain, N. Y., and Shannahan Silk Co., Buffalo; transfer to St. Johnsville.

Seneca Falls. Seneca Knitting Mills, Inc.; purchase building at corner Water and Bridge Sts., move machinery from No. 1 plant there and add some new machinery.

Utica. L-K Hosiery Co., Inc.; purchase 52 knitting machines from C. H. Yates & Co., Utica, and transfer to L-K plant; also add 5 300-needle machines and 2 diagonal machines.

Utica. McLoughlin Textile Corp.; erects addition to make rayon underwear.

North Carolina, Burlington. May Hosiery Mills and National Dye Works merge under name May Hosiery Mills, Inc.; build new steam plant and install 3 150 h. p. boilers.

Burlington. Sellers Hosiery Mills; build 2-story, 100 x 40 ft. mill addition.

Charlotte. Hudson Silk Hosiery Co.; install 6 additional f. f. knitting machines and 4 sewing machines.

Charlotte. Nebel Knitting Co.; construct 2-story, 53 x 160 ft. extension and install 25 additional f. f. knitting machines.

Concord. Hoover Hosiery Co.; erect 1-story, 60 x 120 ft. addition.

Concord. Willis Hosiery Mills; incorporate for $100,000; purchase plant of Concord Knitting Co. and start up.

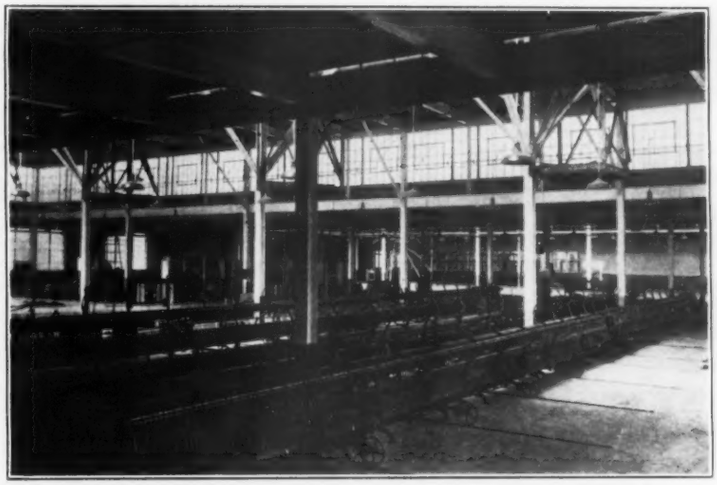
Durham. Golden Belt Mfg. Co.; erects addition to mill and installs 23 full fashioned hosiery machines.

East Durham. Louise Knitting Mills; erect addition to finishing plant; also install additional knitting machines.

Elizabeth City. Elizabeth City Hosiery Co.; installs full fashioned hosiery machines.

Forest City. Forest City Hosiery Co.; installs 6 additional full fashioned hosiery machines.

Greensboro. Carolina Silk Products Corp.; complete 2-story, 100 x 100 ft. mill started last year; 48 f. f. knitting machines.



View in Mule Spinning Room of New Phoenix Mills Plant at Statesville, N. C.

Lenoir. Hickory Hosiery Mills; erect 1-story, 36 x 80 ft. addition; install 30 additional machines.

Marion. Elizabeth James Mills; build 40 x 50 ft. addition to knitting room and 24 x 36 ft. extension to finishing room; install 30 additional knitting machines and 10 loopers.

Thomasville. Girard Hosiery Co.; construct new mill, 2-story, 150 x 60 ft.; install 40 additional knitting machines.

Valdese. Martinat Hosiery Mills; install 24 additional knitting machines.

Valdese. Pauline Knitting Mills; build 1-story, 60 x 80 ft. extension and install 45 additional knitting machines.

Valdese. Waldensian Hosiery Mills; construct 2-story; 50 x 100 ft. extension and install 8 f. f. knitting machines.

Pennsylvania, Allentown. Beaunit Mills (Brooklyn, N. Y.); acquire Allentown plant of American Rayon Products Corp.

Bangor. Julius Kayser & Co.; removed silk glove machines from Crown Mill and installed full fashioned machines for hosiery.

Boyertown. John Blood & Co., Inc., of Philadelphia; install 8 full fashioned hosiery machines at Boyertown branch, in addition to existing seamless hosiery equipment.

Hatboro. Oscar Nebel Co., Inc.; plans addition to be used as throwing plant.

Lebanon. Argus Knitting Mills, of Brooklyn; start branch in former Pierce Textile bldg.

Lebanon. Lebanon Mills, Inc; install additional full fashioned knitting machines, almost doubling capacity.

Middletown. Middletown Knitting Co., Inc.; installs additional machinery.

Millheim. Penns Valley Hosiery Mills of Philadelphia; operate plant formerly Millheim Knitting Mills as their Mill No. 1, and a new plant with 100 knitting machines in Philadelphia as their Mill No. 2.

Mohnton. Colonial Knitting Mills, Inc., of Philadelphia; erects branch plant, 100 x 100 ft. to operate on full fashioned hosiery as their Mill No. 3.

Mohnton. Standard American Hosiery Mills, Inc.; install 6 full fashioned hosiery machines.

Mohrsville. Crown Knitting Mills, Inc.; add a number of knitting machines and finishing machines.

Nazareth. Nazareth Waist Co.; install additional knitting and finishing machines.

Philadelphia. Wm. Brown Co.; construct 4-story extension; install additional machinery.

Philadelphia. Cambria Silk Hosiery Co. (Germantown); erect dyehouse addition at cost of $6,700.

Philadelphia. Co-Ed Silk Hosiery Mills; install additional f. f. knitting machines in plant erected last year.

Philadelphia. Fox Chase Knitting Mills; complete 2-story extension started last year; install additional f. f. knitting machines.

Philadelphia. Hub Knitting Mills; move to larger quarters; install 66 additional circular knitting machines.

Philadelphia. M. & M. Knitting Mills; move to larger quarters and install additional machinery.

Philadelphia. Maidwell Hosiery Co. (Riverside, N. J.); purchase 13 f. f. knitting machines from Co-Ed Knitting Mills and start operations at former Co-Ed plant.

Philadelphia. Mayfair Hosiery Mills; purchase plant and equipment of Mathias Bros.; install 3 additional f. f. knitting machines.

Philadelphia. North American Knitting Co.; organize to take over knitting department of North American Lace Co.

Philadelphia. Onlibest Hosiery Mills; install 18 additional f. f. knitting machines.

Philadelphia. Onyx Knitting Mills; move to larger quarters and install 66 additional circular knitting machines.

Philadelphia. Paragon Knitting Mills; remove plant to new building in Germantown and plan installation of equipment to double former capacity.

Philadelphia. Penfe Hosiery Co.; purchase plant of Mock, Judson, Voehringer Co. and start up as Mill No. 1 with 30 f. f. knitting machines; also buy Claire Hosiery Mills and start up as Mill No. 2 with 35 f. f. knitting machines.

Philadelphia. Revere Knitting Mills; install additional machinery, bringing total to 264 latch needle machines and 72 ribbers; increase capital to $600,000.

Philadelphia. John Richardson; install 7 full fashioned hosiery knitting machines.

Philadelphia. Schletter & Zander, Inc.; build 3-story addition to mill.

Philadelphia. Unity Hosiery Co.; construct 1-story, 15 x 60 ft. addition.

Philadelphia. Wallace Wilson Hosiery Co. (Frankford); install 10 additional f. f. knitting machines.

Philadelphia. Windsor Mills, Inc.; successors to the business of Thos. E. Brown & Sons; capitalized at $500,000; install additional fine gauge knitting machines.

Phoenixville. Parsons & Baker Co.; installs equipment for manufacturing rayon underwear.

Pottstown. Century Beverly Corp.; complete 2-story, 90 x 70 ft. mill addition.

Reading. Busy Bee Hosiery Co., Inc.; increased capital and started erection of new building to house additional machinery.

Reading. Lennox True Blue Hosiery Co.; succeeded Lennox Knitting Mills and laid plans for installing additional machinery.

Reading. Noe-Equi Textile Mills, Inc.; discontinued manufacture of lingerie preparatory to installing 25 additional full fashioned hosiery machines.

Reading. Penn Hosiery Mills; moved to new location bought from Value Hosiery Co. and installed additional equipment.

Reading. Pennshire Hosiery Co.; installed knitting machines to manufacture rayon fabric for women's underwear.

Reading. Sylva Knitting Co.; acquired new building and constructed addition equipped with dyeing and bleaching machinery.

Schuylkill Haven. Walter F. Meck; installed 2 additional knitting machines and 5 sewing machines.

Schuylkill Haven. Schuylkill Haven Knitting Mill; completed 30 x 70 ft. mill addition and installed knitting machinery.

Shamokin. Reliance Hosiery Mills; erect new mill unit with plans for doubling previous capacity.

Shillington. Felden Bros. Co., Inc.; install additional full fashioned hosiery machines.

Shoemakersville. Robt. P. Miller Co.; add 10 knitting machines and necessary finishing machines.

Spring City. Schuylkill Valley Mills; erect new building, with 30 x 18 ft. wing; install additional full fashioned machines.

York. Triumph Hosiery Mills, of Philadelphia; start manufacturing full fashioned hosiery in plant built last year for Norard Hosiery Mills.

South Carolina, Landrum. Excelsior Mills, of Union, start branch plant on men's and women's seamless hosiery.

Sumter. Roseknit Hosiery Co.; establishes mill at Sumter in leased quarters by moving equipment from former location at Providence, R. I.; operate 80 knitting machines on novelty hosiery.

Tennessee, Chattanooga. Davenport Hosiery Mills; install 45 additional full fashioned hosiery machines.

Cleveland. Debonair Hosiery Co; formerly Weiss Hosiery Mill; erects addition for machinery expansion.

Franklin. Franklin Rayon Mills; capital $65,000; manufacture rayon fabrics in leased building; machinery moved from Brooklyn, N. Y.

Kingsport. Kingsport Hosiery Mills; build 86 x 92 ft. addition and install 12 full fashioned hosiery machines.

Lenoir City. Alspach Knitting Co., of Orwigsburg, Pa.; leased plant here and moving machinery south; some new machinery installed.

Lenoir City. Charles H. Bacon Co.; erects 3-story, 62 x 110 ft. addition for machinery expansion.

Texas, Houston. Houston Hosiery Mills; add 10 knitting machines and increase capital to $50,000.

Sherman. Pool Knitting Mills; add 16 knitting machines.

Utah, Salt Lake City. Utah Woolen Mills; erect 2-story, 60 x 37 ft. extension, costing $35,000 and install one additional latch needle machine, 2 full fashioned hosiery machines, 6 loopers and 12 sewing machines.

Virginia, Lynchburg. Wearproof Hosiery Mills of Reading, Pa.; establish branch plant with 60 knitting machines and 40 ribbers; Leroy Miller is superintendent.

Martinsville. Pannil Knitting Co.; erects mill addition of 17,000 sq. ft. floor space; installs 60 knitting machines and 50 sewing machines on cotton union suits.

West Virginia, Martinsburg. Interwoven Mills, Inc.; complete large new warehouse and erect new power plant.

Wisconsin, Kenosha. Allen A. Co.; builds 5-story, 75 x 150 ft., addition; to be equipped for full fashioned hosiery production.

Manitowoc. Martz Knitting Co.; subsidiary of Cadet Knitting Co.; erects 1-story, 28 x 60 ft., addition for storage.

Milwaukee. Eagle Knitting Mills; erect 4-story, 100 x 140 ft., mill into which equipment will be removed early in 1928; add 22 knitting machines to equipment.

Milwaukee. Holeproof Hosiery Co.; installs 40 full fashioned hosiery machines in building purchased from Columbia Knitting & Mfg. Co.

Milwaukee. Milwaukee Knitting Mills; install 20 additional knitting machines.

Portage. Portage Underwear Mfg. Co.; install 25 additional sewing machines; increase capital to $100,000, and make various improvements to plant.

Ripon. Ripon Knitting Works, Inc.; build addition to dye house, 50 x 12 ft.; install new finishing machinery.

Sheboygan. Hand Knit Hosiery Co.; installs 25 additional latch needle machines.

Waupun. Vogue Hosiery Co.; installs number of new machines to replace those damaged by fire.

Canada, British Columbia, Vancouver. Jantzen Knitting Mills, Ltd.; erect new mill, 1-story, 150 x 137 ft., costing $50,000; install 50 knitting machines, transferred from plant in West Vancouver.

Ontario, Hamilton. Chipman-Holton Knitting Co.; erects addition, 3-story, 50 x 60 ft.; installs additional dyeing equipment.

Ontario, Hamilton. Eaton Knitting Co.; erects 2-story, 60 x 120 ft. extension on top of mill building; installs new dyeing equipment.

Ontario, London. Supersilk Hosiery, Ltd.; enlarges plant for accommodation of additional hosiery machines.

Ontario, Owen Sound. Circle-Bar Knitting Co., Ltd.; starts full fashioned hosiery branch plant with 5 machines; later to be increased to 15.

Ontario, St. Catherines. L. O. Hudson Co., Ltd.; adds 2 knitting and 18 sewing machines for rayon underwear; company started in 1926 on full fashioned hosiery.

Ontario, Toronto. Toronto Hosiery Co., Ltd.; installs 3 new dyeing machines at Queen St. Branch, 24 new knitting machines at Sudbury St. Branch, and 14 new winding machines at Coleman Ave. Branch.

Quebec, Drummondville. Butterfly Hosiery Co., Ltd.; erects addition, 2-story, 150 x 54 ft.; installs 10 additional full fashioned hosiery machines.

Quebec, Montreal. Belding Corticelli, Ltd.; double their full fashioned hosiery equipment.

Quebec, Montreal. National Knitters, Ltd.; new firm which purchased knitting machinery of A. G. Spalding & Bros. of Canada, Ltd., Brantford, Ont.

Quebec, Montreal. Regent Knitting Mills, Ltd.; acquire 16,000 sq. ft. additional floor space, and install 9 flat knitting machines.

Quebec, Sherbrooke. Julius Kayser & Co., Ltd.; complete new 4-story, 50 x 120 ft., extension; install 48 additional full fashioned knitting machines.

SILK MILLS

Connecticut, South Coventry. National Silk Co., Inc.; purchase plant of John A. Dady Corp.; install new coners, tubers, reels, spoolers, etc.

Stonington. American Velvet Co.; construct

75 x 165 ft. weave shed; add 5 looms.

Winsted. Mason Silk Co.; purchase plant and equipment of Winsted mill of Belding-Heminway Co.; install 2,000 additional spindles.

Georgia, Elberton. Seaboard Silk Mills; complete 2-story, 70 x 370 ft. plant started last year; also houses for operatives; 216 looms.

Illinois, Elgin. Collingbourne Mills, Inc.; erect 2-story, 160 x 100 ft. addition to house machinery bought from A. Washburn & Sons, Inc., South Coventry, Conn.; takes place of Becket (Conn.) plant of Collingbourne Mills destroyed by flood.

Massachusetts, Athol. Adams Silk Co.; organize by merger of D. E. Adams Co., Athol, and Globe Silk Works, New Haven, Conn.; enlarge Athol plant to accommodate machinery of Globe works.

Fall River. Liberty Textile Works, Inc.; install 24 new looms.

New Hampshire, Manchester. United States Silk Mill; lease additional space and install 8 additional looms, quiller, winder, warper, etc.

New Jersey, Paterson. Buser Silk Co.; build 2-story addition and install additional looms.

Paterson. Dainty Silk Mill; move to Reinhardt Mill and install 8 additional looms.

Paterson. Kapamjie Bros.; move plant from West New York, and increase equipment to 50 looms.

Paterson. H. Kluger; move to new quarters and install new winding and warping machinery and additional looms.

Paterson. John H. Moll Co.; erect 1-story, 63 x 163 ft. addition at cost of $40,000; install 38 jacquard looms.

Union City. Schwarzenbach, Huber Co.; construct 3-story and basement extension, 68 x 92 ft.; cost about $100,000 with equipment.

New York, Rochester. Vogt Mfg. Corp.; build extension having 120,000 sq. ft. floor space at cost of $350,000, including machinery.

North Carolina, Charlotte. Southern Specialty Co.; install additional silk warpers and a slasher.

Pennsylvania, Allentown. Stark Bros. Ribbon Corp.; lease ribbon department of Phoenix Silk Mfg. Co.

Beaver Meadows. MacGowan Bros., Inc.; erect brick addition and install 32 additional looms; this is fourth mill unit and cost was $45,000.

Berwick. Paulton Silk Co., of Paterson, N. J.; erects manufacturing unit at Berwick; 1-story, 70 x 112 ft.; to cost $55,000 and employ about 65 persons.

Bethlehem. R. K. Laros Silk Co.; erect two story addition, 63 x 225 ft. with one story wing, 39 x 224 ft.; estimated cost $110,000.

Bethlehem. Twentieth Century Silk Corp.; erects 2-story addition, 100 x 150 ft. to accommodate additional machinery.

Dunmore. Sherwood Throwing Co., Inc.; operated by Albert J. Pfeiffer, Inc.; adds machinery to bring production to 10,000 lbs. weekly.

East Mauch Chunk. J. P. Bennyhoff takes over former church building and installs looms, operating same as Mill No. 2.

Emaus. Widder Bros.; erect new mill addition to Tremont Silk Mills, doubling capacity of old plant; new 72-inch looms installed and throwing equipment increased.

Hamburg. G. Katterman, Inc.; erects mill extension to house additional machinery.

Hazleton. Louis Russell & Co., Inc.; plan mill addition and make alterations and improvements at plant to accommodate additional machinery.

Lancaster. American Silk Mills, Inc.; complete erection of mill, 2-story, 60 x 200 ft., and install machinery.

Pennsburg. Mandarin Silk Co., Inc., of Phillipsburg, N. J.; erects new, 140 x 62 ft., mill and moves its machinery from former location.

Philadelphia. J. G. Zensen & Co.; purchase equipment formerly operated by Schultz Mfg. Co. and start producing broad silks.

Topton. Penn State Silk Mills; construct basement under plant and install 50 new looms.

Rhode Island, Pawtucket. Ervma Weaving Co.; erects 1-story addition equipped for warping.

Pawtucket. Perfect Silk Mills of Brooklyn, N. Y.; lease space in Trades Bldg. and will transfer machinery there.

South Carolina, Union. Liberty Fabrics Corp.; capital $350,000; machinery transferred from former location in Brooklyn; operate 18 looms and 125 sewing machines on silk underwear.

Tennessee, Morristown. Aronsohn & Hirschfeld Silk Co.; erects 1-story, 47 x 180 ft. mill; transfers 50 looms from Paterson and discontinues Paterson plant.

Shelbyville. American Silk Mills, Inc., of Paterson; locate branch operating 50 looms.

Virginia, Buena Vista. Buena Vista Textile Corp.; lease new building for extension and install 6,000 additional spindles and 100 looms.

Canada, Ontario, Toronto. Dominion Silk Mills, Ltd.; erect 1-story, 94 x 85 ft., addition; install equipment to double production.

RAYON MILLS

Delaware, New Castle. Delaware Rayon Co., Inc.; complete construction of 2-story building and 5 1-story buildings started last year and install machinery in first unit of plant; capacity, 3,000 lbs. per day.

Maryland, Amcelle. Celanese Corp. of America; construct 3 1½-story additions at cost of $2,000,000 including equipment; 3 buildings costing $1,300,000 with equipment; also 3-story office building.

New Jersey, West New York. L. Robison & Co.; lease building at West New York and move 24 tubers, 3 silk winders, 1 cotton winder, 1 reeler from New York to W. N. Y.; add 12 tubers, 2 cotton winders, 39 bobbin machines.

Ohio, Cleveland. Industrial Fibre Co., Inc.; build 1-story, 41 x 228 ft. mill addition and 2-story, 40 x 100 ft. office building; increase production 500,000 lbs. annually.

Tennessee, Johnson City. American Bemberg Corp.; started erection of second unit adjacent to its first unit at Happy Valley; this is second of 5 proposed units for rayon manufacture, each costing around $3,500,000.

Old Hickory. DuPont Rayon Co.; starts construction of third unit of rayon plant here; cost to be about $5,000,000.

West Virginia, Parkersburg. Viscose Co.; starts branch rayon plant in operation in August, and erects additional buildings for storage service.

Canada, Quebec, Drummondville. Canadian Celanese, Ltd.; three buildings of an ultimate group of 10 were completed and put in operation during year at approximate cost of $750,000; plans in process for construction of additions; in addition to making celanese yarn company operates 55 looms on fabrics.

MISCELLANEOUS MILLS

Alabama, Lanett. Lanett Bleachery & Dye Works; construct 1-story, 166 x 73 ft. addition to gray room and bleach house; 2-story addition to finishing building, 97 x 80 ft. and 2-story wing, 50 x 82 ft.

California, Calexico. Calexico Cotton Products, Inc.; construct new 1 and 2-story plant at cost of $20,000; add 1 garnett.

Orange. Western Cordage Co.; increase production by installation of 20 additional spindles.

Connecticut, Bridgeport. Raybestos Co.; construct 1-story, 44 x 46 ft. addition.

Sterling. United States Finishing Co.; erect 1-story, 100 x 210 ft. addition.

Waterbury. Waterbury Mattress Co.; construct 3-story, 50 x 115 ft. addition.

Georgia, Atlanta. Fickett Mfg. Co.; add 2 100-spindle spoolers.

Rossville. National Yarn & Processing Co.; build 1-story, 50 x 200 ft. addition; install skein mercerizing machine and skein dyeing machine.

Illinois, Chicago. Burton-Dixie Corp.; construct 4-story, 85 x 125 ft. warehouse.

Chicago. Louis Terry Corp.; move to larger quarters and install additional dyeing and processing equipment.

Massachusetts, Boston. Special Yarns Corp.; construct 1-story, 100 x 50 ft. extension to dyehouse; install machinery for dyeing rayon in skein form.

Brookfield. Gavitt Mfg. Co.; purchase 4-story building at Brookfield, transfer machinery there and add some new braiders.

Fiskdale. Sturbridge Printing & Finishing Co.; take over former Mill No. 1 of Fiskdale Finishing Co.; remodel plant and install new machinery.

Hebronville. Ray Cotton Co. (Franklin, Mass.); lease former Hebron Mills of B. B. & R. Knight; concentrate cotton waste business there, closing cotton waste plant at Woonsocket; move willowing and cleaning plant from Unionville, Mass., to Hebronville.

Millbury. MacDay Reworked Wool Co.; purchase Phoenix Mills property, Millbury and transfer machinery from Worcester.

Southbridge. Southbridge Finishing Co.; build 2-story, 80 x 40 ft. extension to engraving department.

Swansea. Swansea Dye Works; build 1-story, 100 x 46 ft. dyehouse; add washing, mangling, dyeing and drying machinery.

Waltham. Reliance Garnetting Mills; build 1-story, 100 x 30 ft. mill extension; install 2 additional garnetts.

Webster. Slater Co., Inc.; construct 2-story and basement, 67 x 27 ft. addition to printing department; add 2 printing machines.

Webster. Stevens Linen Works; construct 2-story, 55 x 155 ft. mill addition to house additional looms.

New Jersey, Athenia. Eureka Printing Co.; build 1-story addition to plant and install new machinery.

Englewood. Bergen Silk Dyeing Corp.; organize and take over Barretts Palmer & Heal Dyeing Establishment.

Fairview. Bellman Brook Bleachery Co.; construct 1-story addition.

Newark. Hart Dyeing Co.; build fireproof boiler house, 47 x 40 ft. to replace structure destroyed by fire.

Paterson. Arrow Piece Dyeing & Finishing Co.; construct 1-story extension.

Paterson. Colt Dye Works; erect 1-story addition to increase capacity.

Paterson. Columbia Piece Dye Works, Inc.; construct 1-story, 80 x 100 ft. addition at cost of $32,000, with equipment.

Paterson. DeGise Silk Dyeing Co.; sell plant and equipment to Susquehanna Silk Mills, New York, who operate under DeGise name; improve building, install new power plant and tin weighting machinery.

Paterson. Gatti Silk Dyeing & Finishing Co., Inc.; erects 1-story addition to be used for silk weighting.

Paterson. Empire Piece Dyeing & Finishing Co.; erect 1-story boiler house.

Fairlawn. Textile Dyeing Co. of America, Inc.; erect 1-story, 80 x 80 ft. dyehouse addition.

Paterson. Shindel Silk Corp.; construct addition to dyehouse; build new boiler house; install additional machinery.

Paterson. Victory Dyeing & Finishing Co.; construct 1-story, 75 x 100 ft. and 50 x 100 ft. dyehouse additions.

West New York. Diamond Silk Dyeing & Finishing Co.; build 1-story, 100 x 100 ft. extension at cost of $50,000.

New York, Brooklyn. Banner Silk Dyeing Corp.; move to larger quarters and install more equipment.

Brooklyn. Crown Dyeing & Bleaching Co., Inc.; construct 1-story, 21 x 80 ft. extension at cost of $18,000.

Cohoes. W. Lowenthal & Co.; construct plant addition for use as picker room.

Minetto. Columbia Mills, Inc.; erect new building to house sizing department; also 2-story, 300 x 100 ft. addition, with 170 ft. wing; also enlarges plant at Pullman, Ill.

Pleasant Valley. Valley Finishing Co., Inc.; build extension, having 1,500 sq. ft. space for storage purposes; install finishing machinery to approximately double capacity.

Schenectady. General Electric Co.; construct addition to one of buildings to house major part of company's facilities for drawing copper wire, cotton and asbestos covering copper wire and enameling.

Sloatsburg. Ramapo Finishing Corp.; construct 1-story, 45 x 130 ft. extension and install new printing machinery.

North Carolina, Burlington. Burlington Knitting Mills; open finishing plant on James St., equipped with modern dyeing and finishing machinery capable of taking care of 4,000 to 5,000 dozen daily.

Burlington. Southern Dyeing Co.; purchase larger buildings and move there; install new dyeing machines and winders, approximately doubling capacity.

Concord. Kerr Bleaching & Finishing Works; erect 1-story, 175 x 40 ft. addition.

Mt. Holly. American Yarn & Processing Co.; install equipment for bleaching cotton yarns.

Tryon. Southern Mercerizing Co.; install completely equipped department for bleaching, dyeing and finishing cotton, rayon and silk yarns; install steam plant to generate own power.

Pennsylvania, Ambler. Keasbey & Mattison Co.; acquires former shipbuilding plant at Cornwells, Pa., comprising 25 acres and group of buildings, to be used for plant expansion.

Eddystone. Eddystone Mfg. Co. makes extensive improvements, and sets up complete research laboratory.

Philadelphia. American Embroidery Co., install 13 additional braiders.

Philadelphia. R. B. Dutt Co.; construct new warehouse at cost of $20,000.

Philadelphia. Globe Dye Works (Frankford); build dyehouse addition at cost of $12,000.

Philadelphia. Hoffner Silk Dyeing Co., move to larger quarters and add to equipment.

Philadelphia. Horrocks & Bro. (Frankford); erect addition to dyehouse costing $8,500.

Philadelphia. Hulton Dyeing Co.; erect 1-story office building.

Rhode Island, Apponaug. Apponaug Co.; erected 2-story, 82 x 99 ft. addition.

Bellefont. Imperial Printing & Finishing Co.; plan 1-story, 42 x 106 ft. addition, to cost about $20,000.

Central Falls. Central Warp Co. Inc.; locates at new address and installs new winding machinery, because of fire which destroyed previous plant.

Pawtucket. Dempsey Bleachery & Dye Works; erect 1-story brick addition, 45 x 70 ft.

Pawtucket. Robinson Rayon Co., Inc.; leases portion of former Goff Mills and installs spindles, quillers, coners, winders, etc., as well as dyeing equipment.

Pawtucket. U. S. Finishing Co.; erects addition to pumping plant.

Phillipsdale. American Electrical Works, start two additions to mill, costing over $100,000.

Pontiac. B. B. & R. Knight, Inc.; install two printing machines in Pontiac Bleachery.

Woonsocket. Crown Piece Dye Works; acquire plant of Quality Piece Dye Works, and equip it with new machinery.

South Carolina, Greenville. Southern Franklin Process Co.; building addition to house rayon dyeing plant.

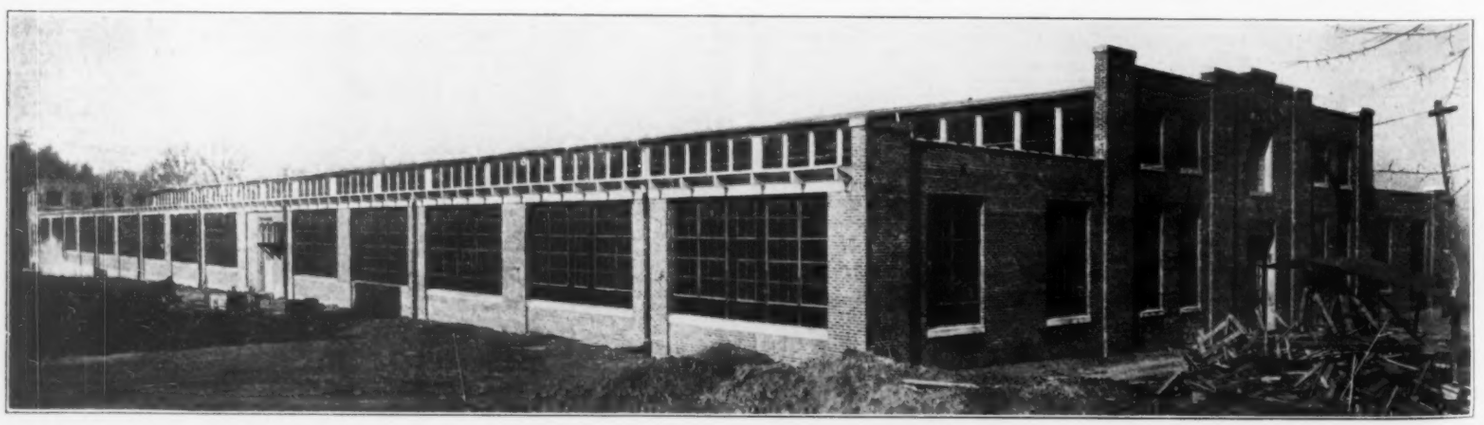
Tennessee, Chattanooga. Standard-Coosa-Thacher Co.; erects 40 x 115 ft. office building.

Washington, Vancouver. Pacific Coast Linen Mills; erect 45 x 90 ft. addition and expect to have plant running full time in 1928.

West Virginia, Parkersburg. Parkersburg Mattress Co.; erects new plant costing $85,000, three-story, 100 x 224 ft.

Wisconsin, Milwaukee. American Textile Dye Works; erects 2-story 60 x 80 ft. addition; installs three nappers and three calendars.

Canada, Ontario, Toronto. Summit Dyeing Co. Ltd.; secure larger building into which to install machinery and allow room for future expansion.



Addition to Plant of Peerless Woolen Mills, Rossville, Ga.

Vertical and Horizontal Organization or Combination In the Textile Industry

Opportunities for Combinations of Both Types— Vertical Type Covering Distribution the Logical Goal

By Charles H. Clark

As a result of the excess machine-hour capacity of most branches of the textile industry developed during and since the World War there have been steadily increasing thought and effort to devise ways and means of cutting manufacturing and selling costs, of stabilizing production, enhancing control of distribution and otherwise meeting the effect of increased competition for business by individual mills and groups of mills. Through these efforts to rehabilitate the industry two distinct schools of economic procedure have developed: One holding that the vertical combination is the solution of the problem, and the other as strongly favoring the horizontal combination.

The vertical unit in its maximum development seeks control of everything from raw material to distribution of product to the consumer. Theoretically it is supposed to reduce overhead to a minimum, insure control of sources of supply and agencies of processing and distribution, with large resultant economies in buying and selling, and always the possibility of doing business on a one-profit basis if it becomes necessary, but with the prime objective of re-inforcing disappearing manufacturing profits with at least a part of those profits now accruing to middlemen.

The horizontal combination involves the merging of groups of mills making similar classes of goods, with the idea of cutting overhead and engaging in mass production, the latter being attained by operating each plant on the class of goods for which it is best adapted, the resultant savings in production and selling costs being such that an ideal organization of this kind should dominate its field and thus result in increased profits.

While the vertical combination under modern industrial conditions is a unit of far more complicated and diverse activities than the horizontal combination, it really represents a reactionary tendency to the simplest industrial state. In the early days of the textile industry, or when it was a home industry, the farmer raised his flax, retted and scutched it, and his family carded, spun and wove it into cloth and then either sold the cloth to other families in the community, or made it up for home use. There was comparatively little decentralization of these processes up to the time of the development of the factory system, and for many years thereafter the linen or wool manufacturer not only controlled his raw material, but also the distribution of his finished goods, and the cotton manufacturer engaged in all of the functions of manufacturing and distribution, although being obliged to rely upon distant sources for his raw material supply. From the earliest days of the factory system the progress of the textile industry toward its present high state of development has been along lines of decentralization and specialization. The most extreme example of the latter is found in the oldest of the leading textile manufacturing countries—Great Britain. There specialization has gone the limit, and there, it would seem, would be the most fertile field for the organization of vertical combinations if there is any virtue in the latter as applied to production.

Specialized English Industry

The extreme specialization of cotton manufacture in England was made possible, and was largely the result of, the concentration of the major portion of the industry within a radius of 25 miles of Manchester in Lancashire, and in the worsted industry it was the result of similar concentration within a radius of about 25 miles from Bradford in Yorkshire. For those who are not fully acquainted with the exceptional degree of specialization in these industries it should be sufficient to outline briefly the chief characteristics of the cotton industry. Little attempt is made at specialization back of the spinning, but, whereas in this country there is little attempt to specialize in our sales yarn mills beyond carding or combing, weaving or hosiery yarns, and occasionally on coarse, medium or fine counts, in Lancashire the specialization starts with the character of cotton used.

The main branches of the industry are the Egyptian and the American; mills in each branch of the industry may operate either mule or ring spindles or both, but they usually spin a small range of either coarse, medium or fine counts, of either hosiery or weaving yarns, of either warp or filling in the case of the latter, and usually deliver the yarn in singles on cops or bobbins. There are also mills specializing on waste, sewing, crochet, lace, tire, heald and numerous other varieties of yarns. Other specialists usually handle the twisting, preparation and packaging, some of these specialized plants being as follows: Doublers, reelers, beamers and warpers, winders, gassers, mercerizers, bleachers and dyers, bleachers and printers, sizers, tape sizers, etc. From the spinning mill the yarn has to be trucked to one or more of the latter specialists located within a 25-mile radius of Manchester, and these extra charges for trucking and handling and the profits of each specialist are found in the final selling price to the manufacturer, hosier or other mill using the yarn, and if the yarn is sold for export it must carry an export packer's charges and profits as well as the profit of the broker or merchant. With each spinner specializing on a few counts, and each processer upon a few operations, undoubtedly a high degree of efficiency is attained in each, and, as a result of large production, costs may be cut to a very low minimum. The proprietor of each plant, however, must make a profit in addition to salary if he is to have sufficient encouragement to remain in business.

The cotton manufacturing business is just as highly competitive in Lancashire today as it is in this country and it is a reasonable assumption, other things being equal, that an ably managed and well financed spinning organization in Lancashire handling practically all of the processing of a finished yarn on a one-profit basis ought to be able to undersell competitors whose finished goods are loaded with several profits, to say nothing of abnormal handling and trucking costs. While it is a fact that some of the most successful of the English mills are self-contained units that are the equivalent of vertical combinations including every process resulting in a finished yarn, and even including weaving in some instances, it is also a fact that very few combinations of any kind have been organized since the world war, and that while the most important of these has been of a vertical nature it has not been highly successful.

It is also to be noted that most of the large English textile combinations now in existence were organized before the world war and are of the horizontal type. An exception will have to be made of the Fine Cotton Spinners and Doublers Association, which, although it does not include weaving mills, and could not be considered a vertical combination in this country, is such in England because of the high specialization of the spinning branch of the industry. Most notable of the British textile combinations, and of world-wide importance as well, is J. & P. Coats, Ltd., which, through its subsidiaries, practically controls the sewing cotton trade of the world. This combination is vertical in that it controls all processes of manufacturing together with the merchandising, and is horizontal in its control of a majority of the six-cord sewing thread mills of the world.

Considers Verticals Impracticable

Here is what a leading English cotton manufacturer has to say regarding the organization of vertical units as a solution of the problems of the Lancashire industry. It is P. D. Barlow, head of Barlow & Jones, Ltd., whose interview in the *Manchester Guardian Commercial* is in part as follows: "The establishment of vertical units may be desirable. In a new country vertical units may be, and probably would be, the proper basis for a textile industry. In an old and highly sectionalized industry like that of Lancashire the creation of such units is very difficult to envisage. It would merely involve, at any rate for a start, the total disruption of the industry and control from a central point, with possibly its decentralization later in specific and individual units to deal with the different sections of this trade. This, in turn, would probably mean the elimination of a large number of existing industrial units. This is theoretically possible, but actually difficult to accomplish, and I think it would not be practicable."

If Mr. Barlow is correct in his assumptions, then such textile combinations as are organized in Great Britain are likely to be along horizontal lines, possibly with some tendency toward centralization of complementary processes as has proved highly successful in the case of the Fine Cotton Spinners and Doublers Association; yet because of the highly competitive character of the British textile business it will be surprising indeed if there is not developed some practical method of combining large groups of cotton mills vertically with the object of centralizing similar processes, reducing handling and trucking costs and cutting the number of profits to a minimum.

Domestic Industry Largely Vertical

Samuel Slater and the other pioneers of cotton manufacturing in this country modeled their organizations after the English types, with decentralized spinning, weaving and finishing units. As the industry spread, however, and widely scattered waterpowers in New England and Atlantic States were utilized it became necessary to build self-contained units because of the difficulty and cost of transportation, and following the or-

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ganization of the Boston Mfg. Co. in Waltham, Mass., in 1813, the complete spinning, weaving and finishing plant became and remained the typical domestic model for nearly a century. Within the last quarter century there has been a fairly strong tendency toward decentralization, and for entirely different reasons this has been quite as marked in the South as in such textile centers as New Bedford in the case of fine-count, gray goods mills, and in Paterson, N. J., in the case of silk mills. Decentralization in the South was largely due originally to the scarcity of skilled labor and to an erroneous impression that the available water was not suitable for bleaching, dyeing and finishing processes. Even with the coming of the latter plants to the South there has been no marked tendency toward vertical organization, although there has never been any such decentralization as exists in England. The knit goods industry contains quite as many examples of decentralization as the silk industry, or the sales-yarn and gray-goods branches of the cotton industry, and the same is true of the spinning branch of the worsted industry. The mere statement of these facts is sufficient to demonstrate that there is ample opportunity for vertical as well as horizontal combinations within the industry.

Basic Factors to Be Considered

Any survey of the textile industry preliminary to a combination movement would disclose as one of its most important features the fact that in practically all of its important branches there is a potential productive capacity considerably in excess of normal demand that has developed a highly competitive condition and sub-normal profits. It is the result in part of an over-extension of plant capacity during the World War and the boom of 1919, and in part to adverse changes in demand and style. In all branches of the industry there are mills employed upon specialties and also upon staple lines that are an exception to this statement and that have continued to operate at a profit. In the wool industry the carded-woolen branch has been much more actively and profitably employed than the worsted branch, and worsted spinners have been more adversely affected than worsted mills that both spin and weave. In the cotton industry manufacturers of fine-count cloths have been better employed than those making medium and coarse-count gray and colored goods, but spinners and weavers in the South, because of their lower costs, have operated at better average profits than those in the North. In the North there are many medium- and coarse-count cotton goods mills and worsted spinning mills that have either been liquidated or that are available at or near liquidating prices. Even in the South there are a considerable number of gray goods mills, and more sales-yarn mills that are feeling the effects of several years of poor business and are now facing the necessity of re-equipping their plants without the depreciation reserves to finance the improvements.

Plenty of Mills Available

Being aware of the over-expanded condition of many portions of the industry, the weak financial condition of large numbers of northern cotton and worsted mills and the unsatisfactory business outlook, the attitude of a majority of northern bankers toward new textile financing is one of thumbs down. Particularly is this the case if they are carrying their share of frozen textile credits. This is equivalent to saying that a considerable number of cotton and worsted mill organizations, and some silk and knit goods mills, as well as certain southern cotton mills, would welcome the opportunity to get under the cover of a combination and would be quite willing to have the promoters decide whether it should be vertical or horizontal. There is no lack of mills to form either type of combination, and some of them can be bought at a fraction of their original cost or of replacement cost. There is no difficulty in finding such makings of a combination, but there is great difficulty in convincing bankers and the public that the combining of these units will result in such economies and profits as would make the projected investment profitable for the banker and stockholders, and there is equal difficulty in finding successful mills to "sweeten" up a combination, whose proprietors or stockholders can be convinced that such participation would be profitable.

For the would-be promoter of textile combinations it is rather unfortunate that the history of textile mergers of the last quarter century is not one of uniform success. The experiences of the old New England Cotton Yarn Co., of the United States Worsted Co., of the New England Southern Mills and its predecessors, to say nothing of the various unsuccessful attempts that were made during this period to combine cotton yarn, knit goods and woolen and worsted mills, were not such as to stimulate confident investment in the securities of new combinations.

There are successful textile combinations and they are of vertical as well as horizontal character. The United States Finishing Co. is a horizontal combination and a most successful one. The American Woolen Co. is both vertical and horizontal and has a long record of successful operation, despite its present non-dividend paying basis. It is horizontal in its combining of complete carded woolen and worsted units, and is vertical in that it took in yarn mills as well as cloth mills, and because it controls its merchandising. There is plenty of room for another large finishing combination, preferably one that would combine in its various units facilities for finishing practically all classes of textiles. There is plenty of room for another woolen and worsted combination, but whether it should be of a vertical or horizontal type is a problem that should be given careful study before the promotional stage is entered upon. There is hardly an important branch of textile manufacture that would not be better stabilized if mergers of the right kind were organized, were adequately financed, and were efficiently managed in their buying, manufacturing, financing and merchandising.

Privately Controlled Groups

This brief survey of the subject of vertical and horizontal textile combinations would not be complete without recognition of the considerable progress that has been made by private enterprise along both of these lines. As illustration of the horizontal type of organization thus developed refer to such groups of cotton mills as have been built up in the South by the Cones of Greensboro, N. C., the Cannons of Concord, N. C., the Callaways of La Grange, Ga., the big West Point group in Georgia and Alabama, the Riverside and Dan River group and several notable groups of combed yarn mills in Gaston Country, N. C. Several of these groups, by the way, are of the vertical type in that they control their merchandising. Among similar organizations in the North may be mentioned the Pacific Mills, Amoskeag Mfg. Co., M. T. Stevens & Sons Co., Arlington Mills, Manville-Jenckes Co., and more recently there has been a similar type of expansion by the Pepperell Mfg. Co. and the Nashua Mfg. Co., the latter two cases having been made possible by the absorption of additional units at liquidating prices. It will also be recognized that a number of these northern organizations are partially of the vertical type in that they control their merchandising.

Control from Other Industries

The textile industry also contains a number of interesting examples of the vertical type of organization, of which some are privately controlled, while a number represent penetration of the textile field by users of textiles, some of which are large combinations of plants in their particular industries. I refer to such organizations as the Standard Textile Products Co. that controls the Meritas group of cotton mills, and manufactures and sells direct table oil cloths, artificial leathers, wall coverings and a large variety of other coated textiles; the various automobile tire companies that own and operate cotton mills, including the Goodyear Tire & Rubber Co., the Firestone Tire & Rubber Co., the U. S. Rubber Co., and the Mason and Fisk companies; the Bemis Bros. Bag Co. operating several cotton mills in this country and a jute mill in India; Marshall Field & Co., the big Chicago jobbers and retailers, operating a number of cotton and knit goods mills; the Ford Motor Co., which operates cotton, wool and linen mills on a rather small scale at present and that even raises part of its flax supply. All of these vertical combinations represent invasion of the textile industry by companies from outside industries for the purpose of controlling character and quality of their textile supply and to strengthen their competitive position in their own industry by being able when necessary to sell on a one profit basis.

Vertical Combinations in Embryo

Although a considerable number of textile mills have invaded in a small way other industries that have been and may still remain large buyers of their product, there are no outstanding examples of the vertical type of combinations or organizations extending through other industries to the buyers of the latter's products that have been initiated within the textile industry. It is true that a number of comparatively small cotton, wool and silk mills have invaded the cutting-up field and are selling all or a part of their products direct to retailers, and a few large mills are handling a portion of their products in this manner.

Knit Goods Industry

It is quite natural that the knit goods branch of the industry should provide more examples of organizations of the vertical type than other branches of the industry, because the major portion of its product leaves the mill in finished form ready for the consumer, instead of requiring the cutting-up trade or other industry to convert the product into consumers' goods as is the case with the major portion of cotton, wool, silk and rayon manufactures. The knit goods industry was the first to sell its goods direct to jobber and retailer in a large way and it has several notable examples of selling direct to the consumer. It also has more examples of jobbers and retailers operating its mills than any other branch of the textile industry. In view of the comparative ease of developing the vertical organization in this field it may seem strange that it has no outstanding example of a large vertical combination, but possibly this is explained in part by the fact that it requires less capital to enter this field than most other textile lines, thus making it difficult for a combination to control the activities of manufacturers and merchants whose business may be taken over and whose services are dispensed with in order to cut overhead. It is also possible that merchandising is so much more efficient, and the possible saving of distribution cost so much less in this branch of the industry than in other textile branches, that the opportunity for a vertical combination of large size to effect substantial economies is unattractive. The correctness of these hypotheses is seriously to be doubted, but they are the only ones that come readily to mind as an explanation of failure to exploit the exceptional opportunities offered in this field for a vertical combination covering everything from raw material to the consumer.

It must be evident from what has

(*Continued on page* 461)

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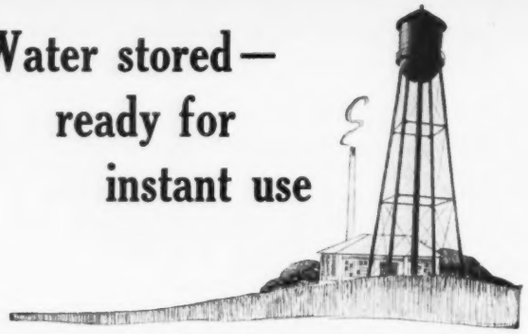

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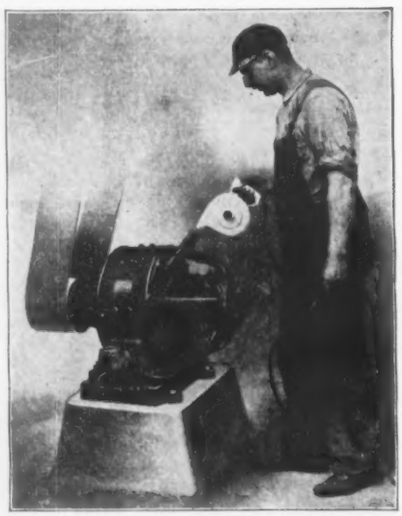

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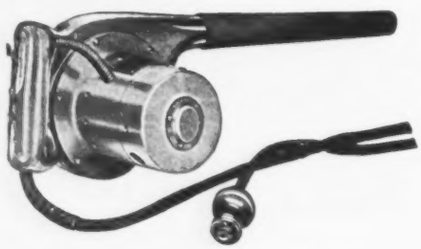

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Share Prices Low; Profits Better

New Bedford Average Dividend Lowest for 25 Years But 1927 Better Than 1926

From Our New Bedford (Mass.) Correspondent

NEW BEDFORD, MASS.

THOUGH few of the executives of the fine cotton cloth mills of New Bedford are openly optimistic as to the prospects for the coming year, the textile industry is not lacking signs that 1928 will at least measure up to that of 1927, while a few of the mill men have expressed the opinion that it will be better than the preceding one, incidentally the best experienced in a number of years in this city. For the first few weeks of the present year, the mill output was smaller than for many months, the curtailment started toward the end of 1927 being continued in the early part of this year with a view to stabilizing prices.

NEW BEDFORD DIVIDENDS

(From Sanford & Kelley)

Corporation	Capital	1927	1926
Acushnet	$2,000,000	6	6
Beacon com	1,200,000	6	6
Beacon pfd	1,283,000	6	6
Booth com	852,800	0	0
Booth pfd	344,100	6	6
Bristol	1,000,000	6	8½
Butler	2,300,000	0	2
City Mfg	750,000	6	6
Dartmouth com	3,600,000	6	8
Dartmouth pfd	600,000	5	5
Fairhaven pfd	2,000,000	0	0
Gosnold com	1,650,000	0	0
Gosnold pfd	1,650,000	0	3
Grinnell	1,500,000	4½	3
Hathaway	1,600,000	6	6
Holmes com	600,000	0	4
Holmes pfd	600,000	5	6
Kilburn	2,250,000	6½	8
Manomet	8,000,000	0	0
Nashawena	7,500,000	4½	7
N. B. Cot. com	1,050,000	*	....
N. B. Cot. pfd	750,000	6	6
Neild	1,200,000	12	12
Nonquitt	4,800,000	0	0
Pemaquid	800,000	....	....
Pierce	600,000	32	32
Potomska	1,800,000	0	0
Quissett com	2,000,000	8	8
Quissett pfd	305,000	6	6
Sharp com	2,656,000	0	0
Sharp pfd	1,161,000	0	0
Soule	1,260,000	28	8
Taber	1,600,000	6	6
Wamsutta	6,000,000	4	5
Whitman	3,000,000	0	3
	$72,761,900		

* Not made public.

Refuse to Pile Up Goods

Manufacturers are apparently united in their policy of refusing to pile up stocks of unsold goods, and as orders have run out, the looms have been stopped rather than pile up big inventories in these days of uncertain prices. Help in the cotton mills is plentiful these days, and the tendency to operate the machinery merely to retain the best of the operatives, a policy followed in the distant past, has been abolished by most of the mill men. The starting up of the Firestone plant, formerly Manomet No. 4 Mill, along with the resumption of operations by the Goodyear and Fisk plants, found employment for something like 3,000 operatives soon after the start of the new year, proving a great boon for hundreds of employes who had been out of work for the last two months of 1927. The policy of these three plants in employing none but American citizens, or those who had applied for first naturalization papers, was in line with the methods adopted at their other plants, and was regarded here as being a mighty fine thing if only for doing away with transient help that finds its way into the large textile centers at different times.

Taken on the whole, 1927 was somewhat better than had been anticipated in the early part of the year. Most of the fine cotton cloth mills ran their looms at practically normal capacity with the exception of the last month, when, as orders ran out, there was a tendency to curtail operations rather than stock up with goods that might be in storage for months. Such of the cotton mill corporations as have presented their financial statements for the last fiscal year have reported favorable operations for 1927, a number of them more than earning the dividends that were disbursed, in striking contrast to losses that had been reported for these same corporations for 1926.

Stocks Fail to Respond

In view of the good showing made by many of the cotton mills, the downward tendency in mill shares was one that is hardly explainable, except that it was in keeping with general conditions in this city, the same being true of the real estate market in particular. As a result of this apparent lack of confidence, a number of mill shares sold at the lowest point they have known, and building, of course was practically at a standstill, there being no additions of any consequence. The number of looms and spindles operated for the year were about the same as in 1926.

Mill men generally sought a reduction in taxes, with the result that real estate and machinery at most of the plants was cut in valuation to the extent of approximately 10%, with indications that further reductions will be forthcoming this year. In addition, the tax rate was also slightly reduced, making for a saving all around along these lines. Confidence appeared to be returning toward the end of the year, and this faith in the future of the mills was continued with the opening of the new year, judging by the increase in the demand for shares. This, in spite of the fact that the mills were at their quietest, in a business sense, when the demand for mill stocks appeared at its peak.

To Offset Tax Loss Sales

As is customary during December, a number of mill shares were disposed of during that month with a view to taking tax losses. Within a few weeks, it is likely that many of these shares will be back in the possession of the original owners. Many of these stocks, selling as they did at the lowest point they have known in years, went to interests outside of New Bedford. No change was made in the wage scale, despite the fact that cuts averaging 10% went into effect in smaller centers than New Bedford and Fall River. The mill men here were of the opinion that a cut in wages would not relieve the situation, as it would be merely a matter of passing it along the line to the eventual consumer, rather than benefiting the manufacturer.

The average dividend paid out to stockholders in New Bedford mills was not very flattering when compared with the generosity obtaining in past years. For 1927 the average was approximately $3.50, or the lowest in 25 years. The total amount distributed was $2,553,976, or a decrease of $350,458 from the previous year. This decrease was accounted for by the failure of Gosnold preferred, Whitman and Holmes common to make any distribution at all compared with the modest returns they paid in 1926, and reductions in the dividends paid out by Nashawena and Bristol.

Soule Disburses $20 Extra

Had it not been for Soule disbursing an extra of $20, making $28 in all, the decrease would have been still larger. The amount of capital failing to make any return during 1927 was $30,469,800, this embracing Booth common, Butler, Fairhaven preferred, Gosnold common, Gosnold preferred, Holmes common, Manomet, Nonquitt, Potomska, Sharp common, Sharp preferred, and Whitman. Pierce Mfg. Co. was able to maintain its rate of $32. Others displaying a generous attitude, in addition to Soule, were Neild with $12 and Quissett common with $8. No other corporation distributed better than 6½, this being Kilburn, the others ranging from 3 to 6. Figured for the last 10 years, the average dividend paid out by the New Bedford mills is $11.27 per share, so that the rate for the last year is less than one-third of the mean average for the last 10 years.

As a general rule, the deposits in New Bedford Savings Banks furnish a reflex of conditions for the year in the city's cotton mills. During 1927 the deposits increased $4,424,314, compared with an increase of $3,386,998 in 1926 and $1,758,241 in 1925, the increase being the largest ever recorded. It is estimated that the number of spindles decreased during the year by 119,892, making the present number in operation approximately 3,382,586. Additional looms

HIGH AND LOW ON NEW BEDFORD STOCKS

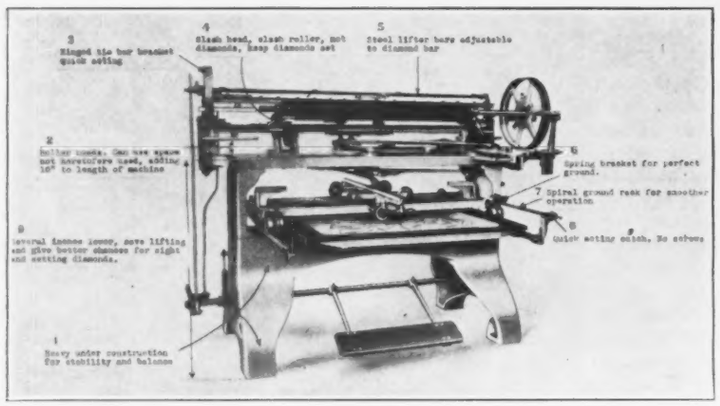
(From Sanford & Kelley)

	—1927—		—1926—	
	High	Low	High	Low
Acushnet	94	70	90	70
Beacon pfd	98	85	100	85¼
Booth com	No Sales		No Sales	
Booth pfd	90	70	114	94
Bristol	122	85	175	100
Butler	58	35	116½	47½
City Mfg	106	90	111	95
Dartm'th com	105	75⅝	141½	101
Dartm'th pfd	88	80	87	85
Fairhaven com	5	2 cts.	1	1
Fairhaven pfd	5	3¼	20	1
Gosnold com	17	5	65	10
Gosnold pfd	40	18	81	20
Grinnell	83	64	101	58
Hathaway	110	104	115	95
Holmes com	50	29	100	45
Holmes pfd	60	40	87½	60
Kilburn	108½	60	135	103
Manomet	11	2½	37	9½
Nashawena	83½	55½	110	69
Neild	168½	140	160	140
N. B. Cot com.	No Sales		No Sales	
N. B. Cot. pfd.	85	77	97½	83
Nonquitt	37¾	17	61	30
Pierce Bros	No Sales		No Sales	
Pierce Mfg	380	343	425	315
Potomska	84	58	94	54
Quissett com	104	80	141	95
Quissett pfd	100	93	95	94
Sharp com	10½	70 cts.	36	10
Sharp pfd	30	5	61	23¼
Soule	180	140	183	142
Taber	94	76	106	83
Wamsutta	70	45	97	48
Whitman	53	25	94	38½

COMPARATIVE VALUES OF TYPICAL NEW ENGLAND TEXTILE SHARES 1914 AND 1920 TO 1928, SHOWING HIGHS AND LOWS FOR EACH YEAR

	—1927—			—1926—			—1925—			—1924—		—1923—		—1922—		—1921—		—1920—		—1914—	
	Dec. 31	High	Low	Dec. 31	High	Low	Dec. 31	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	Low	July
American Woolen, pfd	48½	87	47	86½	90	67½	88½	96	74	102½	92¼	118⅛	97	111⅝	102	104	91	105¼	92	73⅝	74¼
Amoskeag, com	93⅛	116	48½	52	71	48½	70	84½	62	80	60½	112	67½	117	106	104	†72	*167	75½	58½	62
Androscoggin	37	55½	37	43½	53½	43½	125	132	125	145	132	116½	100½	141	119	125	†119	*225	193¼	135¼	137
Arlington	43¾	70	40	67	95	67	98⅞	104¼	90⅝	106¼	99⅞	175	142¼	114½	90½	109	90½	172¾	89	74¼	80
Bates	108½	133¼	108½	118	155	118	190⅝	233¼	190⅝	235½	210	263	235¼	273	190½	211⅜	183	315½	195	213¼	213¼
Bigelow-Hartford, com	93	96	77	80½	101½	73	101	105	100	†114½	102½	†119¼	114¼	119¼	93¾	122½	93¾	111	93	.....	.....
Great Falls	6⅝	16	5¼	10	19⅛	6	19⅛	24½	12	37	23½	77½	33½	120½	75¾	147½	119½	241	131	168	170⅝
Lyman	186	186	110	112½	120	112½	116¼	142¼	116	166½	142¼	183⅛	166½	186½	162½	180	162½	190½	175	112	120
Merrimack, com	153	160⅝	112⅞	112¼	115	98¼	100⅛	112	75¼	112	99⅝	107⅞	100½	104½	90¾	102	74	125½	100	24½	24⅝
Nashua, com	56½	63¾	40	42¼	60¼	40	60	73¾	60	85½	69	79	71¼	85	73	109½	†85	*260¼	105½	630	672½
Naumkeag	174½	194	155	115½	182	145¼	186	203	180¾	195	164½	*315	255	260¼	210¼	208	189¼	241½	195	172	172
Pacific	38¾	44½	35½	42	51	35½	53	81¼	51	86½	71	100	†84	†190	159	170	147	175	†160	106	110
Pepperell	100½	120½	99¾	113⅝	141	110½	134½	142	107	142½	108	167½	134	180	164⅜	202	178	220	200	290	305
York	20⅝	34	20	31½	56½	31	55	112¾	55	125½	103⅜	230	120¼	220	195	225	195	226	133½	85	85

* Old stock. † New stock.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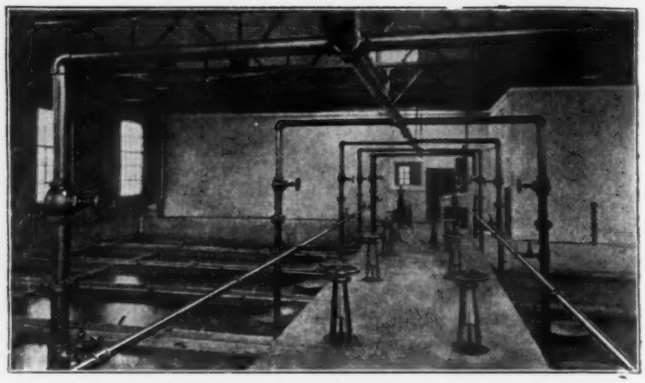

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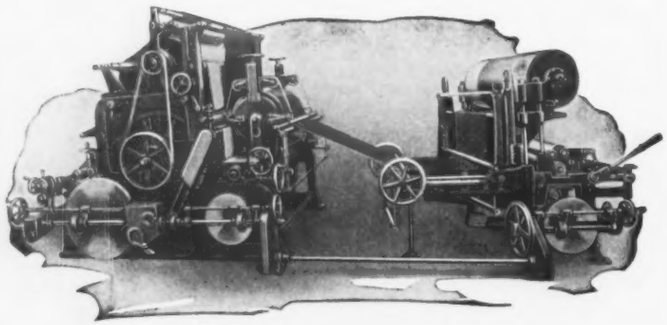

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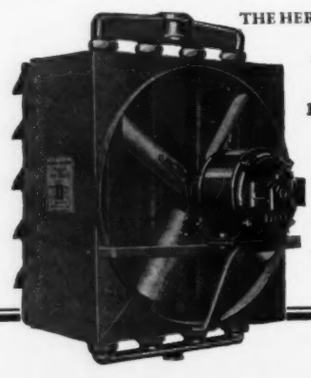

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were operated to the number of 1,861, making 58,110 as the average number operated during the year. As the Manomet and Fairhaven Mills did not operate during 1927, the number of employes was reduced by approximately 4,920, making in round figures about 35,000 employed in the cotton mills of the city. With the starting up of the Firestone, and resumption of work at the Goodyear and Fisk plants, not less than 3,000 will be employed there, with possibilities that this number will be considerably augmented if the mills decide to run more than one shift.

Silk Mfg. Shows Increase

Weaving of all silk cloths has made substantial headway, the Gilt Edge Silk Mill having greatly increased its capacity during the last few years. The Old Colony Silk Mill is now in full swing and on the way to making returns for its stockholders. These are the largest of the silk weaving concerns, though a number of smaller plants are finding steady employment for a number of skilled operatives in turning out fine silk goods.

Transactions in cotton mill shares were reported as setting a record in recent years, and in many cases new low prices were recorded, the decline being the most pronounced in 30 years. Considerable fluctuation was noted in many of the shares, with most of the dealing being made in Manomet, Nashawena, Sharp common and Wamsutta. The number of shares changing hands during the year is estimated as being about 2% of the capital stock. Manomet ranged all the way from 2½ to 11, sale of No. 4 Mill to the Firestone interests giving a boost to the stock.

Kilburn Shows Fluctuation

Kilburn stock showed a fluctuation of 48½ points during the year, the price ranging from 60 to 108½. City showed a small margin in the high and low for the year with 106 and 90. Pierce Mfg. Co. sold as high as 380, with a low of 343 but even at the high figure, the investor would be netting better than 8%. Soule was selling 12 months ago around 140, but in December changed hands at 177½, later dropping back to 145, minus the dividend of $22 per share. Neild, paying $12, ranged in selling price from 140 to 168½, with Wamsutta touching the lowest price it has known in changing hands at 45. The high price for the year was 70. Whitman, selling at 25, was another stock to change hands at bargain rates, this being the lowest price recorded since it was re-incorporated in 1898. Nashawena suffered a slight setback when the dividend was passed in the first quarter, the stock selling as low as 55½, but afterwards it touched 83½.

In the last month of 1927, and in the early part of the present year, signs of an improvement in the market value of mill stocks was noted, this being particularly true of shares that were on a dividend-paying basis. The future, of course, is entirely problematical, and indications are that it is to be a case of the executive who can adjust his plant to meet the market conditions, who will reap whatever profitable business is available during 1928.

In these days, where so many of the cotton mills have recently been forced to pass up dividends that have been forthcoming regularly in the past, it is reassuring to know that at least 15 New Bedford cotton mill corporations have never missed paying dividends since they started paying them, covering a period of 14 to 36 years. None of the other mills missed more than 4 years, and that 18 out of the 23 mill corporations paid dividends in 1927, one disbursing as high as $32, another $28, and a third $12. At the prevailing rates in the mill share market, purchasers would net from 5½ to 10% on their investments, figured on dividend rates for the last year.

Fortified with Quick Assets

Of 24 cotton mills corporations in New Bedford, all but three show a surplus of quick assets over liabilities. The net debt on the plant of the Gosnold Mills is reported as $300,917, that on the Sharp as $983,225, and that on the Manomet as $1,004,041. On an invested capital of $72,778,400, the surplus of quick assets is shown as $27,558,369, or considerably more than one-third of the total investment. The largest amount credited to any one corporation is the $2,564,584 for Dartmouth, this being on a total capital of $4,200,000. Quissett comes next in line with $2,425,028 on a total capital of $2,305,000, Kilburn being next with quick assets of $2,382,567 on a capital of $2,250,000. In proportion, however, Pierce Mfg. is unquestionably the most strongly fortified, with quick assets of $2,041,197 on a capital of $600,000. As Pierce did not issue any stock dividend at the time many of the other corporations were declaring them, the stockholders are now reaping the benefit in generous returns, the rate of $32 per share having been maintained since 1923. As the surplus of net quick assets is something like three and a third times the amount of the par value of the capital, the Pierce is at present in a better position than any other plant to continue its generous policy toward its stockholders.

Mixed Year for Fall River Mills

Fine Goods Plants in Fair Shape But Plain Goods Outlook Poor

From Our Fall River (Mass.) Correspondent

THE Fall River fine goods mills with but one or two exceptions weathered the last year fairly well, most of them having paid dividends and turning the year in a better condition than at the close of the previous 12 months, notwithstanding the fact that their issues weakened materially as a whole. The plain goods mills have not fared as well and their outlook for the future is not encouraging. Some of the latter have been idle for the greater part of the year and nearly all have been forced to curtail to more or less extent.

Three of the local plants have already cut wages 10% in the hopes of being able better to meet competition in the South and elsewhere and at the time of this writing the remainder of the mills are discussing a readjustment of the wage scale. Manufacturers still maintain that the local depression has not been due to lack of demand for goods so much as to prices being so low that they could not meet them except at a loss. Taxes too were higher than ever before in the history of the city and they have been further advanced for the present year.

One of the few outstanding features in the textile industry locally for the year was the ability of the Pilgrim Mills and the King Philip mills to pay dividends of 20% and 16% respectively. Both are fine goods mills and they have operated close to capacity throughout the year. Pilgrim stock held firm around 138 throughout the year with King Philip issues fluctuating from 125 to 148. Both corporations added to their surplus accounts during the year.

The Luther Mfg. Co., more than earned its dividend of 8% and increased its dividend. The Charlton also paid 8%. As the mill has not held its annual meeting its financial showing has not become available but its stock has held firm around 100 with the Luther stock continuing at 116 for the year. Charlton sold around 116 one year ago.

The Davis, another fine goods mill, paid 4% from earnings but its stock dropped from 75 to 53. The Lincoln Mfg. Co., paid no dividend during the year although it is reported to have wiped out its sizable debt of several years standing and to have earned a dividend during the third quarter. The stock has held firm around 50 throughout the year. The Granite Mills met with financial difficulties early in the year and was forced to reorganize. The reorganization on a smaller capital basis is reported as progressing favorably. The Osborn Mills, a semi fine goods corporation, are in the process of reorganization following forced receivership.

The Stevens Mfg. Co., which specializes in bed quilts and fancies, paid 6% dividends and broke about even for the year. The stock is quoted at 95 which is 15 points off for the year. Both the Ancona Co., and the Conanicut Mills, semi-fine goods corporations, have been idle throughout the year. The former is now being dismantled at the instance of the bondholders who bid in the property when offered at auction sale. The Conanicut has been in receiver's hands over a year but is being held intact in hopes of disposal as a whole upon the adjustment of tax claims now in dispute. The Parker Mills are reported to be slowly working out of their difficulties which when brought

HIGH AND LOW ON FALL RIVER STOCKS

(From G. M. Haffards & Co.)

	—1927—		—1926—	
	High	Low	High	Low
Am. Linen	15	.60c	31	13
Ancona Pfd.	No Sales		No Sale	
Arkwright	No Sales		15	10
Barnard	31½	20	50	41
Bourne	70	61½	102	54
Border City	40	14¼	62	36
Chace	5	1½	38	15
Charlton	110	100	125	110
Cornell	68	60	100	75
Conanicut	No Sales		No Sale	
Davol	25	9¼	42	20
Davis	63¾	57½	96	66½
Flint	94	70	101	77½
Foster	No Sales		180	180
Granite	25	1	60	17½
King Philip	154	123	137	112
Laurel L Com.	20½	10	9½	5
Laurel L Pfd.	25	25	....	....
Lincoln	47½	45	65	41
Luther	113½	108	130½	115
Merchants	38½	34	72	45
Mechanics	....	....	43	18
Narragansett	20	20	65	55
Osborn	No Sales		60	20
Parker Com	6	5	20	....
Parker Pfd.	....	....	11	11
Pilgrim Com.	137½	130	143	138
Pocasset	No Sales		35	24
R. Borden	40	15	70	35
Sagamore	151½	108	177	130
Shawmut Com.	85	85	125	....
Shawmut Pfd.	No Sales		No Sales	
Shove	15	10	30	10
Stafford	10	1¼	46	13
Stevens	106	89½	119½	105
Troy C. & W.	125	110	125	105
Union Cotton	86	61	110	70
Wampanoag	25	15	40	15
Weetamoe	15	1¼	29	15

FALL RIVER DIVIDENDS 1927

(From G. W. Hafford & Co.)

Names of Corps.	Capital	Rate	Amount
American Linen	$800,000	0	.....
Ancona Pfd., ¶	100,000	0	.....
Ancona com ¶	200,000	0	.....
Arkwright	1,000,000	0	.....
Barnard	1,250,000	0	.....
Bourne	1,000,000	4	$40,000
Border City	1,800,000	....	.....
Chace	1,200,000	0	.....
Charlton	1,200,000	8	96,000
Conanicut	*300,000	0	.....
Cornell	600,000	4	24,000
Davis	2,500,000	4	100,000
Davol	1,500,000	0	.....
Flint	1,160,000	6	69,600
Granite com	‡312,500	0	.....
Granite pfd	312,500	0	.....
King Philip	2,250,000	16	360,000
Lincoln	2,250,000	0	.....
Luther	525,000	8	42,000
Laurel pfd	300,000	0	.....
Laurel com	600,000	0	.....
Merchants	1,500,000	4	60,000
Narragansett	600,000	0	.....
Osborn §	750,000	0	.....
Parker pfd	1,250,000	0	.....
Parker com	1,500,000	0	.....
Pilgrim	1,200,000	20	240,000
Pocasset	1,200,000	0	.....
Richard Borden	1,000,000	0	.....
Sagamore	3,000,000	8	240,000
† Seaconnet	.....	0	.....
Shawmut pfd	250,000	1¾	4,375
Shawmut com	350,000	0	.....
Shove	1,200,000	0	.....
Stafford	1,000,000	0	.....
Stevens	1,200,000	6	72,000
Tecumseh	750,000	5½	41,250
Troy C. & W.	300,000	0	.....
Union Cotton	1,200,000	6	72,000
Wampanoag	1,000,000	0	.....
Weetamoe	1,250,000	0	.....
	$41,660,000		$1,461,175

* Amount authorized. Outstanding $251,700. Now in receivers' hands.

†Sold at Receivers' Sale now known as the Howard Arthur Mills.

‡ Capital reduced from $1,250,000, and preferred stock issued.

§ Reorganized known now as Osborn Mills, Inc., with 6,000 shares no par value.

¶ Now owned by Bond Holders.

An average of 3.507%+ on the above capital

to a head over a year ago, resulted in a complete reorganization.

The Sagamore Mfg. Co., led the plain goods mills in dividend disbursements through paying 8%, the same as for the previous year. Dividends are reported to have been earned but as the annual meeting has not been held the total earnings are not known. The corporation showed a very large surplus in its last annual statement. Sagamore stock sold from 150 down to 108. The Bourne, Cornell, Merchants and Union held to their dividend rates of the previous year, the first three paying 4% each and the latter 6%. The Bourne and Cornell earned their dividends but the Merchants and Union were forced to draw on their surplus accounts. Bourne stock has held very firm around 70, Merchants dropped from 54 to 38, Cornell dropped from 72 to 65 per share and Union sold down to 68 from 88 at first of year.

Flint Mills continued their 6% dividend rate and still retain a large surplus yet the stock dropped during the year from 88 to 65. The Weetamoe and Mechanics Mills combined as the Weetamoe early in the year and considerable money has been expended in the revamping of the several units so that with any return of good business the plant is in a position to make good. The Barnard Mfg. Co. has issued no statement as yet for the year but has admittedly run behind and has paid no dividend for the past two years. The stock is quoted at 30 as against 37 one year ago. The American Linen was closed early in the summer because of pressing liabilities and inability to secure further financing. A proposed plan of reorganization has been advanced but no action has been taken upon it.

Arkwright Mills have managed to operate to some extent despite the handicap of a heavy debt but its stock is of no market value. Border City has passed dividends for several years but by so doing has been able to instal considerable new machinery and continue operations. The stock has slumped in the past 12 months from 44 to 20 per share. Chace Mills have been closed for the past seven months and liquidation proceedings are being considered.

Davol Mills have felt the depression with the other plain goods mills and the stock has dropped from 30 to 17. The financial statement of the corporation for the year has not been issued. Laurel Lake Mills are reported to have more than held their own for the year but are finding it a slow process rallying under the reorganization plan found necessary when nearly bankrupt two years ago.

Narragansett Mills, though paying no dividend for the year, managed to keep going the larger part of the time and break about even. The stock, however, has dropped from 60 to 35 per share. The Pocasset Mfg. Co. is being liquidated. Most of the mill has already been stripped of machinery and the mills are being razed to allow of development of the real estate for other than mill purposes.

Richard Borden Mfg. Co. has not paid a dividend since the middle of 1926 and it has only operated in part the present year. The stock has dropped off some 10 points during the year. The Seaconnet Mills were purchased by private parties early in the year and are now being electrified and newly equipped as the Howard-Arthur Mills. Shove Mills stock has sold as low as $10 per share notwithstanding the plant has been operating on a better average than many of the plain goods mills.

Satisfactory Earnings in South

Effects of Cooperate Spirit Reflected in Activities of Mills in That Section

From A. M. Law & Co., Spartanburg, S. C.

IN contrast with the preceding three years 1927 was a year of satisfactory earnings for most of the southern mills. Cotton in 1923 reached peak prices and then gradually declined until the fall of 1926 when it sold so low that it was evident it could not go much lower. A declining raw material market makes it quite difficult for mills to have a margin of manufacturing profit. Over-production was also a factor tending to depress the goods market. These years, however, were probably the best for the industry in the long run as they led to the creation of The Cotton-Textile Institute, the increased spirit of cooperation among southern mills and more advanced selling methods. These constructive efforts were of considerable assistance in 1927. Cotton had also reached rock bottom prices and began gradually to advance. While goods prices were rather slow to follow, yet mills which had purchased their cotton at favorable prices were able to show excellent profits.

The year, however, was not without mixed tendencies. The first six months represented gradual improvement with excellent earnings but as cotton advanced very rapidly in August, the goods market did not follow. At this time of the year most of the mills have very little raw material on hand so that they did not benefit by this increase in value just as they failed to have any great loss the preceding year when the decline occurred in the same month.

There was a tendency also toward over-production during the fall months making it necessary for mills to curtail considerably toward the end of the year. For these reasons the earnings for the second half of 1927 were not quite equal to those of the first period.

Price Trends

The more active southern mill stocks were selling at quite low prices in January, 1927, in some cases at the lowest quotation since 1921. From this low point stocks advanced steadily throughout the year. The demand was steady and offerings became increasingly scarce. The average shares increased about 20 points and by the close of 1927 were selling at the highest prices since 1923. There were exceptions of course among the inactive stocks and non-dividend paying shares which have continued to lag. Throughout the year buying was purely of an investment character and not of a speculative nature. Some of the more speculative stocks also advanced but are still selling at quotations considerably lower than the relative price of the higher price shares.

Individual Companies

Avondale Mills which is now selling at about 1150 per share had the greatest advance of any stock in the number of points, having a net change in bid price during the year of 240 points. This company which is one of the strongest southern mills has been very successful over a number of years and is capitalized with only $600,000 common on which 60% cash dividends are paid annually. As the price per share is quite high it is not an active stock.

Bibb has been rather active since recapitalization of the company in 1926. There was a good deal of speculative activity in its shares, quotations on which increased from 113 to 150 and then fell off again to present quotations of 137 representing a net increase of 24 points.

Cannon Mills stock is always very inactive though it is one of the largest southern mills. It advanced from 17 (par value $10) to 21 and the company paid total dividends including extras of $1.10 per share.

Clifton, Monarch and Pacolet are always investment stocks which have a good market whenever available. Quotations on these shares advanced steadily. Monarch retired its $1,000,000 7% preferred on Jan. 1, 1928, and increased its common dividend rate from 7% to 8%. The net profits of the company for the past year were sufficient to retire the preferred.

Union-Buffalo Mills made an excellent showing and paid a 6% dividend on the common in November. The stock advanced from a low of 30 to a high of 66 selling off to 59 at the close of the year.

Victor-Monaghan common is always a good barometer of the market tendency as it is active and somewhat speculative. It advanced from a low of 89 to 109 selling off toward the close of the year to 104 or a net change of 14 points. As Victor-Monaghan is gradually being accumulated by larger holders it is not as active now as it was a few years ago.

Preferred Stock

Throughout the year there was very good investment buying of preferred stocks whenever available. Union-Buffalo first preferred was quite strong, increasing in price from 87 to 100. Woodside preferred quotations increased from 87 to 96. Pacolet, Beaumont, Arcadia, Inman and Judson A always sell at a premium of 2 to 5 points and are very difficult to purchase as they are very much sought after. There were few offerings of these stocks. Toward the close of the year an issue of $1,000,000 Piedmont Print Works 7% preferred carrying a bonus of common was offered at par and very well received. This marks a continuation of the tendency started several years ago for the establishment of finishing plants in the South.

The Outlook

We should expect reasonable earnings for southern mills during 1928 though profits may not be quite as good as during 1927. Cotton is always the uncertain factor but we expect rather large acreage and probably lower cotton prices for the new crop. However, close observation on the part of the management of the mills, careful merchandising, and cooperation to control production should lead to continued good business for southern mills through the year. Money is plentiful and we anticipate that stock prices will continue firm with excellent investment buying of all offerings of high grade stocks.

We do not think that prices will advance as much as during 1927 as they were selling entirely too low in the beginning of that year and they have already had a considerable increase in value. The investment demand for preferred stocks and good dividend paying common stocks will be even better during 1928 than during the preceding year. There will be a continuation of the tendency toward consolidations. New England mills will also likely be on the lookout to purchase southern mill properties if they can be obtained at an attractive price.

SOUTHERN MILL STOCKS

(From A. M. Law & Co.)

Name of Mill	Bid Jan. 4 1927	Bid Dec. 27 1927	Change
Anderson Cotton Mills	93	114	+21
Arcadia Mills	225	250	+25
Avondale Mills, Ala.	900	1,140	+240
Belton Mills	49	43	−6
Bibb Mfg. Co.	113	137	+24
Calhoun Mills	114	130	+16
Cannon Mfg. Co.	17	21	+4
Cheanee Mills	130	137	+7
Clifton Mfg. Co.	132	144	+12
Columbus Mfg. Co.	122	114	−8
Cowpens Mills	49	82	+33
D. E. Converse Co.	105	114	+9
Duncan Mills	80	114	+34
Gaffney Mfg. Co.	69	75	+6
Gainesville Cotton Mills	175	188	+13
Gluck Mills	80	80	
Hamrick Mills	112	128	+16
Laurens Mills	150	150	
Marlboro Mills	28	23	−5
Monarch Mills	127	140	+13
Newberry Cotton Mills	118	128	+10
Orr Cotton Mills	92	104	+12
Pacolet Mfg. Co	208	216	+8
Piedmont Mfg. Co.	128	142	+14
F. W. Poe Mfg. Co.	106	80	−26
Riverside & Dan River	169	174	+5
Saxon Mills	88	98	+10
Spartan Mills	150	157	+7
Union Buffalo Mills	30	59	+29
Union Buffalo Mills 1st Prfd.	87	99	+12
Union Buffalo Mills 2nd Prfd.	46	59	+13
Victor-Monaghan Co.	89½	104	+14½
Ware Shoals Mfg. Co.	140	150	+10
Williamston Mills	200	200	....
Woodruff Cotton Mills	120	124	+4
Woodside Cotton Mills	113	125	+12
Woodside Cotton Mills Prfd.	87	94	+7